```
R version 3.6.1 (2019-07-05) -- "Action of the Toes"
Copyright (C) 2019 The R Foundation for Statistical Computing
Platform: x86_64-apple-darwin15.6.0 (64-bit)

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[R.app GUI 1.70 (7684) x86_64-apple-darwin15.6.0]

2020-01-28 12:50:46.558 R[4919:593373] Antidote - Texteurs: Module texteur installé dans /Applications/R.app
(org.R-project.R)
> ########################
> #JF GODBOUT MANUSCRIPT##
> #CHAPTER 5##############
> #August 23, 2018########
> ########################
> #Appendix Chapter 5#####
> ########################
>
>
################################################################################################################
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> #Appendix 5.A: Replication of Table 5.3, The Determinants of Individual Party Loyalty (Cumulative Analysis)
with Fractional logit regressions#
>
################################################################################################################
###############################
>
################################################################################################################
###############################
>
> rm(list=ls())
>
> #Prep data
>
> library(mfx)
Loading required package: sandwich
Loading required package: lmtest
Loading required package: zoo

Attaching package: ‘zoo’

The following objects are masked from ‘package:base’:

    as.Date, as.Date.numeric

Loading required package: MASS
Loading required package: betareg
>
> data1 <- read.csv(file="~/Dropbox/Canada-Manuscript/Analysis/data1.csv",header =TRUE)
>
> data1 <- subset(data1,data1$conservative==1 | data1$liberal==1)
>
> #drop turnout < .10
> data1 <- subset(data1,data1$turnout>.10)
>
```

```
> #drop total vote <10
> #Note that 31st Parliament is dropped
> data1 <- subset(data1,data1$total.vote>10)
>
> #drop total votes = 0 for non-liberal + non-conservative parties
> data1 <- subset(data1,data1$el.total.vote.mean>0)
>
> #select periods, Liberal + Conservative separately
>
> lib1 <- subset(data1,data1$liberal==1)
> cons1 <- subset(data1,data1$cons==1)
>
> lib.p1 <- subset(lib1,lib1$parliament<16)
> cons.p1 <- subset(cons1,cons1$parliament<16)
> lib.p2 <- subset(lib1,lib1$parliament>15)
> cons.p2 <- subset(cons1,cons1$parliament>15)
>
> #Models (continuous)
>
> m1 <- loyalty ~ government + cabinet + minority + no.term + turnout + el.effective + el.total.vote.mean +
maritime + quebec + west + parliament + parliament.squared + cohort + cohort.squared
>
> ######################################
> #Appendix 5.A.1 Conservatives 1st-40th#
> ######################################
>
> model5.3.1 <- lm(m1,data=cons1)
> summary(model5.3.1,2)

Call:
lm(formula = m1, data = cons1)

Residuals:
     Min       1Q   Median       3Q      Max
-0.85836 -0.01123  0.00605  0.02635  0.14803

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)         8.126e-01  7.985e-03 101.771  < 2e-16 ***
government          1.516e-02  2.507e-03   6.047 1.61e-09 ***
cabinet             1.270e-02  3.326e-03   3.818 0.000137 ***
minority           -8.349e-03  2.829e-03  -2.952 0.003180 **
no.term            -6.547e-03  2.482e-03  -2.638 0.008382 **
turnout             4.152e-02  6.212e-03   6.685 2.64e-11 ***
el.effective        5.748e-03  1.974e-03   2.912 0.003616 **
el.total.vote.mean -2.179e-07  1.005e-07  -2.170 0.030102 *
maritime           -5.629e-03  3.196e-03  -1.761 0.078279 .
quebec             -2.986e-02  3.228e-03  -9.251  < 2e-16 ***
west               -6.558e-03  2.789e-03  -2.351 0.018770 *
parliament          1.708e-02  2.454e-03   6.961 3.93e-12 ***
parliament.squared -2.036e-04  2.883e-05  -7.062 1.92e-12 ***
cohort             -6.136e-03  2.415e-03  -2.541 0.011090 *
cohort.squared      1.206e-05  2.881e-05   0.419 0.675513
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.06664 on 3960 degrees of freedom
  (11 observations deleted due to missingness)
Multiple R-squared:  0.3027,
  Adjusted R-squared:  0.3002
F-statistic: 122.8 on 14 and 3960 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                  (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government         -0.27
cabinet             0.09       -0.35
minority            0.20        0.17      -0.02
no.term            -0.36        0.05      -0.07    0.01
turnout            -0.59       -0.10      -0.03   -0.37     0.02
el.effective       -0.48        0.06       0.07   -0.05     0.01   -0.01
el.total.vote.mean  0.17       -0.06      -0.09    0.05     0.04   -0.02   -0.28
```

```
maritime           -0.09        0.02      -0.05    0.02     0.05    0.02   -0.12         0.04
quebec             -0.27       -0.09      -0.06    0.04     0.07    0.11    0.09         0.00
west               -0.02        0.00       0.01    0.01     0.00   -0.05   -0.07         0.12
parliament          0.13        0.03       0.00   -0.02    -0.84    0.03   -0.02        -0.05
parliament.squared  0.29       -0.08       0.05   -0.01    -0.13   -0.07    0.06        -0.05
cohort             -0.22        0.01       0.00    0.00     0.85    0.00    0.02         0.01
cohort.squared     -0.14        0.01      -0.05    0.03     0.14   -0.01   -0.05         0.04
                   maritime quebec west  parliament parliament.squared cohort
government
cabinet
minority
no.term
turnout
el.effective
el.total.vote.mean
maritime
quebec              0.26
west                0.33     0.27
parliament         -0.01    -0.05   0.04
parliament.squared -0.07     0.00  -0.11 -0.37
cohort              0.02     0.07  -0.05 -0.99       0.32
cohort.squared      0.07    -0.05   0.10  0.34      -0.94              -0.35

> nobs(model5.3.1)
[1] 3975
> round(coeftest(model5.3.1, vcov = vcovHAC(model5.3.1)),2)

t test of coefficients:

                   Estimate Std. Error t value Pr(>|t|)
(Intercept)            0.81       0.01   79.19   <2e-16 ***
government             0.02       0.00    4.56   <2e-16 ***
cabinet                0.01       0.00    4.85   <2e-16 ***
minority              -0.01       0.00   -3.80   <2e-16 ***
no.term               -0.01       0.00   -3.64   <2e-16 ***
turnout                0.04       0.01    5.16   <2e-16 ***
el.effective           0.01       0.00    2.63     0.01 **
el.total.vote.mean     0.00       0.00   -3.58   <2e-16 ***
maritime              -0.01       0.00   -1.64     0.10 .
quebec                -0.03       0.01   -5.27   <2e-16 ***
west                  -0.01       0.00   -2.86   <2e-16 ***
parliament             0.02       0.00    8.86   <2e-16 ***
parliament.squared     0.00       0.00   -5.87   <2e-16 ***
cohort                -0.01       0.00   -3.38   <2e-16 ***
cohort.squared         0.00       0.00    0.33     0.74
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
>
> model5.3.1 <- glm(model5.3.1,dat=cons1,family=quasibinomial(logit))
> round(coeftest(model5.3.1, vcov = vcovHAC(model5.3.1)),2)

z test of coefficients:

                   Estimate Std. Error z value Pr(>|z|)
(Intercept)            0.50       0.20    2.52     0.01 **
government             0.42       0.08    4.90   <2e-16 ***
cabinet                0.53       0.11    4.79   <2e-16 ***
minority              -0.22       0.10   -2.35     0.02 *
no.term               -0.13       0.06   -2.13     0.03 *
turnout                0.98       0.18    5.42   <2e-16 ***
el.effective           0.08       0.05    1.56     0.12
el.total.vote.mean     0.00       0.00    0.43     0.66
maritime              -0.18       0.09   -2.04     0.04 *
quebec                -0.47       0.10   -4.72   <2e-16 ***
west                  -0.16       0.09   -1.82     0.07 .
parliament             0.28       0.05    5.19   <2e-16 ***
parliament.squared     0.00       0.00   -2.67     0.01 **
cohort                -0.08       0.05   -1.56     0.12
```

```
cohort.squared         0.00       0.00   -0.97     0.33
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> ######################################
> #Appendix 5.A.2 Conservatives 1st-15th#
> ######################################
>
> model5.3.2 <- lm(m1,data=cons.p1)
> summary(model5.3.2,2)

Call:
lm(formula = m1, data = cons.p1)

Residuals:
     Min       1Q   Median       3Q      Max
-0.85470 -0.02058  0.01824  0.04442  0.17027

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)         7.616e-01  1.786e-02  42.645  < 2e-16 ***
government          2.350e-02  6.183e-03   3.800 0.000150 ***
cabinet             2.982e-02  8.536e-03   3.494 0.000489 ***
minority            3.813e-02  1.409e-02   2.707 0.006860 **
no.term            -9.770e-03  6.005e-03  -1.627 0.103928
turnout             5.357e-02  1.294e-02   4.139 3.67e-05 ***
el.effective        9.653e-03  4.164e-03   2.318 0.020551 *
el.total.vote.mean -4.658e-07  5.678e-07  -0.820 0.412113
maritime           -1.038e-02  7.066e-03  -1.469 0.141902
quebec             -4.088e-02  6.414e-03  -6.374 2.40e-10 ***
west               -8.895e-03  7.723e-03  -1.152 0.249628
parliament          2.824e-02  6.627e-03   4.262 2.14e-05 ***
parliament.squared -8.075e-04  2.710e-04  -2.980 0.002929 **
cohort             -4.316e-03  6.231e-03  -0.693 0.488661
cohort.squared     -2.126e-04  2.379e-04  -0.894 0.371700
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.09551 on 1614 degrees of freedom
  (11 observations deleted due to missingness)
Multiple R-squared:  0.1979,
  Adjusted R-squared:  0.1909
F-statistic: 28.44 on 14 and 1614 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                  (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government         -0.35
cabinet             0.05       -0.16
minority           -0.19        0.40       0.04
no.term            -0.36        0.07      -0.09    0.03
turnout            -0.55       -0.12      -0.08   -0.17     0.02
el.effective       -0.34        0.01       0.09   -0.11    -0.03    0.00
el.total.vote.mean  0.08       -0.03      -0.06   -0.11     0.01    0.02   -0.42
maritime           -0.05       -0.03      -0.12   -0.02     0.11    0.02   -0.15        -0.09
quebec             -0.25       -0.04      -0.04   -0.03     0.00    0.05    0.13         0.00
west               -0.02       -0.06      -0.03    0.06     0.03   -0.07    0.00         0.03
parliament          0.04        0.06       0.03    0.16    -0.79    0.02   -0.05         0.02
parliament.squared  0.30       -0.14      -0.04   -0.38     0.02   -0.01    0.16        -0.12
cohort             -0.30        0.07       0.00    0.11     0.82    0.03   -0.06         0.03
cohort.squared      0.03       -0.04      -0.03   -0.15     0.00   -0.05    0.05        -0.05
                  maritime quebec west  parliament parliament.squared cohort
government
cabinet
minority
no.term
turnout
el.effective
el.total.vote.mean
maritime
quebec              0.26
```

```
west                0.21     0.21
parliament         -0.12    -0.02  -0.03
parliament.squared  0.09     0.08   0.02 -0.57
cohort              0.11     0.05   0.03 -0.88       0.29
cohort.squared     -0.06    -0.10  -0.07  0.38      -0.63              -0.50
```

```
> nobs(model5.3.2)
[1] 1629
> round(coeftest(model5.3.2, vcov = vcovHAC(model5.3.2)),2)

t test of coefficients:

                  Estimate Std. Error t value Pr(>|t|)
(Intercept)           0.76       0.02   36.65   <2e-16 ***
government            0.02       0.01    2.61     0.01 **
cabinet               0.03       0.01    3.99   <2e-16 ***
minority              0.04       0.02    2.53     0.01 **
no.term              -0.01       0.00   -2.11     0.03 *
turnout               0.05       0.02    3.40   <2e-16 ***
el.effective          0.01       0.00    2.27     0.02 *
el.total.vote.mean    0.00       0.00   -1.12     0.26
maritime             -0.01       0.01   -1.38     0.17
quebec               -0.04       0.01   -3.64   <2e-16 ***
west                 -0.01       0.01   -1.37     0.17
parliament            0.03       0.00    5.65   <2e-16 ***
parliament.squared    0.00       0.00   -2.75     0.01 **
cohort                0.00       0.00   -0.98     0.33
cohort.squared        0.00       0.00   -0.76     0.45
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
>
> model5.3.2 <- glm(model5.3.2,dat=cons.p1,family=quasibinomial(logit))
> round(coeftest(model5.3.2, vcov = vcovHAC(model5.3.2)),2)

z test of coefficients:

                  Estimate Std. Error z value Pr(>|z|)
(Intercept)           0.78       0.24    3.29   <2e-16 ***
government            0.27       0.11    2.48     0.01 **
cabinet               0.47       0.13    3.59   <2e-16 ***
minority              0.67       0.31    2.20     0.03 *
no.term              -0.16       0.09   -1.73     0.08 .
turnout               0.73       0.22    3.41   <2e-16 ***
el.effective          0.12       0.06    1.80     0.07 .
el.total.vote.mean    0.00       0.00   -0.48     0.63
maritime             -0.15       0.11   -1.31     0.19
quebec               -0.44       0.12   -3.59   <2e-16 ***
west                 -0.09       0.12   -0.78     0.44
parliament            0.29       0.08    3.45   <2e-16 ***
parliament.squared    0.00       0.01   -0.38     0.70
cohort               -0.08       0.08   -1.06     0.29
cohort.squared        0.00       0.01   -0.62     0.53
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> ########################################
> #Appendix 5.A.2 Conservatives 16th-40th#
> ########################################
>
> model5.3.3 <- lm(m1,data=cons.p2)
> summary(model5.3.3,2)

Call:
lm(formula = m1, data = cons.p2)

Residuals:
     Min       1Q   Median       3Q      Max
```

```
-0.73939 -0.00329  0.00392  0.01124  0.05795

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)        8.978e-01  1.169e-02  76.826  < 2e-16 ***
government         1.449e-02  1.557e-03   9.307  < 2e-16 ***
cabinet            1.929e-03  1.951e-03   0.989 0.322944
minority          -1.156e-02  1.547e-03  -7.470 1.13e-13 ***
no.term           -1.113e-03  1.494e-03  -0.745 0.456294
turnout            3.616e-02  4.113e-03   8.793  < 2e-16 ***
el.effective      -1.775e-03  1.438e-03  -1.234 0.217288
el.total.vote.mean -2.937e-08  5.052e-08  -0.581 0.561044
maritime          -2.989e-03  2.041e-03  -1.464 0.143303
quebec            -8.281e-03  2.328e-03  -3.557 0.000383 ***
west              -1.537e-03  1.599e-03  -0.961 0.336696
parliament         5.468e-03  2.038e-03   2.683 0.007349 **
parliament.squared -6.596e-05  2.903e-05  -2.272 0.023183 *
cohort            -7.397e-04  1.739e-03  -0.425 0.670544
cohort.squared    -1.184e-05  2.528e-05  -0.468 0.639472
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.03147 on 2331 degrees of freedom
Multiple R-squared:   0.12,
  Adjusted R-squared:  0.1147
F-statistic:  22.7 on 14 and 2331 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                  (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government        -0.17
cabinet            0.02       -0.42
minority          -0.06        0.09       0.00
no.term           -0.05        0.03      -0.07   -0.04
turnout           -0.25       -0.11      -0.01   -0.43     0.04
el.effective      -0.19        0.10       0.05   -0.06     0.04   -0.07
el.total.vote.mean  0.15      -0.08      -0.08    0.07     0.05   -0.01   -0.29
maritime           0.01        0.04      -0.02    0.00     0.03    0.04   -0.03         0.07
quebec             0.02       -0.15      -0.08    0.00     0.17    0.18    0.02         0.06
west               0.05        0.02       0.01   -0.01     0.01    0.00   -0.11         0.16
parliament        -0.47        0.08       0.03    0.07    -0.62    0.03   -0.07        -0.07
parliament.squared  0.61      -0.10      -0.01   -0.08    -0.06   -0.05    0.08         0.01
cohort             0.13       -0.04      -0.03   -0.02     0.66    0.00    0.05         0.02
cohort.squared    -0.21        0.05       0.00    0.00     0.14    0.01   -0.05         0.02
                  maritime quebec west  parliament parliament.squared cohort
government
cabinet
minority
no.term
turnout
el.effective
el.total.vote.mean
maritime
quebec             0.26
west               0.40     0.32
parliament        -0.01    -0.16   0.02
parliament.squared -0.03     0.08  -0.06 -0.73
cohort            -0.02     0.12  -0.06 -0.92       0.59
cohort.squared     0.08    -0.03   0.10  0.57      -0.88              -0.62

> nobs(model5.3.3)
[1] 2346
> round(coeftest(model5.3.3, vcov = vcovHAC(model5.3.3)),2)

t test of coefficients:

                  Estimate Std. Error t value Pr(>|t|)
(Intercept)           0.90       0.01   68.66   <2e-16 ***
government            0.01       0.00    8.61   <2e-16 ***
cabinet               0.00       0.00    1.15     0.25
minority             -0.01       0.00   -5.89   <2e-16 ***
no.term               0.00       0.00   -1.07     0.28
```

```
turnout                0.04       0.01    6.04   <2e-16 ***
el.effective           0.00       0.00   -1.06     0.29
el.total.vote.mean     0.00       0.00   -0.66     0.51
maritime               0.00       0.00   -1.40     0.16
quebec                -0.01       0.00   -3.22   <2e-16 ***
west                   0.00       0.00   -1.04     0.30
parliament             0.01       0.00    3.06   <2e-16 ***
parliament.squared     0.00       0.00   -2.56     0.01 **
cohort                 0.00       0.00   -0.52     0.60
cohort.squared         0.00       0.00   -0.56     0.57
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
>
> model5.3.3 <- glm(model5.3.3,dat=cons.p2,family=quasibinomial(logit))
> round(coeftest(model5.3.3, vcov = vcovHAC(model5.3.3)),2)

z test of coefficients:

                  Estimate Std. Error z value Pr(>|z|)
(Intercept)           0.12       0.66    0.18     0.86
government            1.10       0.19    5.84   <2e-16 ***
cabinet               0.48       0.30    1.61     0.11
minority             -0.57       0.10   -5.80   <2e-16 ***
no.term              -0.11       0.08   -1.39     0.16
turnout               1.94       0.34    5.78   <2e-16 ***
el.effective         -0.12       0.10   -1.18     0.24
el.total.vote.mean    0.00       0.00   -0.45     0.66
maritime             -0.22       0.14   -1.54     0.12
quebec               -0.65       0.18   -3.67   <2e-16 ***
west                 -0.12       0.12   -0.98     0.33
parliament            0.29       0.11    2.53     0.01 **
parliament.squared    0.00       0.00   -1.38     0.17
cohort               -0.05       0.09   -0.58     0.56
cohort.squared        0.00       0.00   -0.94     0.35
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> ################################
> #Appendix 5.A.4 Liberal 1st-40th#
> ################################
>
> model5.3.4 <- lm(m1,data=lib1)
> summary(model5.3.4,2)

Call:
lm(formula = m1, data = lib1)

Residuals:
     Min       1Q   Median       3Q      Max
-0.82551 -0.01354  0.00528  0.03198  0.17206

Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)         7.879e-01  8.286e-03  95.090  < 2e-16 ***
government          9.546e-03  2.997e-03   3.185 0.001458 **
cabinet             9.671e-04  3.125e-03   0.309 0.756984
minority           -1.610e-02  2.886e-03  -5.579 2.55e-08 ***
no.term             8.732e-04  2.542e-03   0.343 0.731253
turnout             4.082e-02  6.751e-03   6.046 1.60e-09 ***
el.effective        1.511e-03  2.292e-03   0.659 0.509666
el.total.vote.mean -4.413e-07  1.092e-07  -4.041 5.41e-05 ***
maritime           -2.106e-02  3.494e-03  -6.026 1.82e-09 ***
quebec             -1.381e-02  2.804e-03  -4.927 8.64e-07 ***
west               -4.066e-02  3.920e-03 -10.373  < 2e-16 ***
parliament          1.945e-02  2.684e-03   7.248 4.94e-13 ***
parliament.squared -3.648e-04  2.998e-05 -12.167  < 2e-16 ***
cohort             -5.046e-03  2.634e-03  -1.915 0.055491 .
```

```
cohort.squared      1.088e-04  3.054e-05   3.561 0.000373 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.07729 on 4628 degrees of freedom
  (2 observations deleted due to missingness)
Multiple R-squared:  0.2713,
  Adjusted R-squared:  0.2691
F-statistic: 123.1 on 14 and 4628 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                  (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government         -0.01
cabinet             0.08       -0.31
minority            0.21        0.06       0.15
no.term            -0.37        0.05      -0.03   -0.01
turnout            -0.58       -0.11      -0.12   -0.27    -0.01
el.effective       -0.54       -0.04       0.11   -0.05     0.11    0.00
el.total.vote.mean  0.15        0.03      -0.09    0.00     0.04    0.00   -0.30
maritime           -0.13        0.03      -0.03   -0.02     0.04   -0.02   -0.02         0.13
quebec             -0.21       -0.02       0.00   -0.07    -0.02    0.05    0.16         0.06
west                0.03        0.01      -0.07    0.00     0.05   -0.03   -0.18         0.17
parliament          0.17       -0.07      -0.04   -0.01    -0.84    0.04   -0.11        -0.07
parliament.squared  0.22        0.11       0.03   -0.03    -0.01   -0.03    0.05        -0.01
cohort             -0.24        0.00       0.05   -0.02     0.85   -0.01    0.11         0.02
cohort.squared     -0.09        0.02      -0.07    0.08     0.01   -0.04   -0.05         0.00
                  maritime quebec west  parliament parliament.squared cohort
government
cabinet
minority
no.term
turnout
el.effective
el.total.vote.mean
maritime
quebec              0.38
west                0.28     0.33
parliament         -0.04    -0.03  -0.04
parliament.squared  0.02     0.08   0.02 -0.48
cohort              0.04     0.00   0.02 -0.98       0.43
cohort.squared     -0.01    -0.02   0.04  0.45      -0.93              -0.46

> nobs(model5.3.4)
[1] 4643
> round(coeftest(model5.3.4, vcov = vcovHAC(model5.3.4)),2)

t test of coefficients:

                  Estimate Std. Error t value Pr(>|t|)
(Intercept)           0.79       0.01   56.67   <2e-16 ***
government            0.01       0.00    2.96   <2e-16 ***
cabinet               0.00       0.00    0.43     0.66
minority             -0.02       0.00   -7.44   <2e-16 ***
no.term               0.00       0.00    0.28     0.78
turnout               0.04       0.01    4.93   <2e-16 ***
el.effective          0.00       0.00    0.40     0.69
el.total.vote.mean    0.00       0.00   -5.54   <2e-16 ***
maritime             -0.02       0.01   -4.20   <2e-16 ***
quebec               -0.01       0.00   -4.94   <2e-16 ***
west                 -0.04       0.01   -5.96   <2e-16 ***
parliament            0.02       0.00    5.25   <2e-16 ***
parliament.squared    0.00       0.00  -10.47   <2e-16 ***
cohort               -0.01       0.00   -1.46     0.14
cohort.squared        0.00       0.00    3.66   <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
>
> model5.3.4 <- glm(model5.3.4,dat=lib1,family=quasibinomial(logit))
```

```
> round(coeftest(model5.3.4, vcov = vcovHAC(model5.3.4)),2)

z test of coefficients:

                  Estimate Std. Error z value Pr(>|z|)
(Intercept)           0.31       0.22    1.40     0.16
government            0.17       0.07    2.43     0.01 **
cabinet               0.40       0.09    4.35   <2e-16 ***
minority             -0.76       0.09   -8.96   <2e-16 ***
no.term               0.03       0.09    0.33     0.74
turnout               1.09       0.16    6.62   <2e-16 ***
el.effective          0.03       0.08    0.34     0.74
el.total.vote.mean    0.00       0.00   -3.26   <2e-16 ***
maritime             -0.56       0.10   -5.70   <2e-16 ***
quebec               -0.45       0.08   -5.83   <2e-16 ***
west                 -1.25       0.12  -10.47   <2e-16 ***
parliament            0.28       0.09    3.16   <2e-16 ***
parliament.squared   -0.01       0.00   -9.87   <2e-16 ***
cohort                0.01       0.09    0.08     0.94
cohort.squared        0.00       0.00    1.19     0.24
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> ################################
> #Appendix 5.A.5 Liberal 1st-15th#
> ################################
>
> model5.3.5 <- lm(m1,data=lib.p1)
> summary(model5.3.5,2)

Call:
lm(formula = m1, data = lib.p1)

Residuals:
     Min       1Q   Median       3Q      Max
-0.81295 -0.02731  0.01444  0.04933  0.25693

Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)         6.847e-01  1.971e-02  34.739  < 2e-16 ***
government          2.749e-02  6.624e-03   4.150 3.51e-05 ***
cabinet             9.475e-03  1.074e-02   0.882    0.378
minority           -2.497e-02  1.609e-02  -1.552    0.121
no.term            -1.273e-03  6.593e-03  -0.193    0.847
turnout             9.149e-02  1.465e-02   6.246 5.41e-10 ***
el.effective       -7.661e-03  5.498e-03  -1.393    0.164
el.total.vote.mean -3.949e-07  6.998e-07  -0.564    0.573
maritime           -6.525e-02  7.767e-03  -8.401  < 2e-16 ***
quebec             -4.731e-02  6.732e-03  -7.027 3.13e-12 ***
west               -1.099e-01  1.070e-02 -10.270  < 2e-16 ***
parliament          4.725e-02  7.461e-03   6.333 3.14e-10 ***
parliament.squared -1.766e-03  3.120e-04  -5.660 1.79e-08 ***
cohort             -3.032e-03  6.975e-03  -0.435    0.664
cohort.squared      5.975e-05  2.578e-04   0.232    0.817
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.1055 on 1565 degrees of freedom
  (2 observations deleted due to missingness)
Multiple R-squared:  0.3591,
  Adjusted R-squared:  0.3533
F-statistic: 62.63 on 14 and 1565 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                  (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government          0.09
cabinet             0.01       -0.23
minority           -0.15       -0.34      -0.01
no.term            -0.36        0.03      -0.05    0.03
turnout            -0.59       -0.04      -0.04   -0.05    -0.09
```

```
el.effective       -0.45       -0.01       0.11   -0.10     0.10    0.01
el.total.vote.mean  0.08        0.05      -0.09   -0.20     0.05    0.05   -0.45
maritime           -0.09        0.00      -0.04    0.06     0.02   -0.01   -0.11        -0.01
quebec             -0.21       -0.02       0.01    0.01    -0.04    0.04    0.14         0.05
west               -0.07       -0.04      -0.07    0.06     0.02    0.01   -0.07         0.10
parliament          0.04       -0.16       0.00    0.23    -0.77    0.11   -0.16        -0.02
parliament.squared  0.34        0.27      -0.03   -0.53    -0.01   -0.05    0.17        -0.09
cohort             -0.32       -0.06       0.00    0.13     0.82    0.00    0.07         0.04
cohort.squared      0.04        0.06       0.05   -0.17     0.01   -0.13    0.03         0.01
                   maritime quebec west  parliament parliament.squared cohort
government
cabinet
minority
no.term
turnout
el.effective
el.total.vote.mean
maritime
quebec              0.42
west                0.28     0.36
parliament          0.02     0.05   0.01
parliament.squared -0.08    -0.09  -0.04 -0.57
cohort              0.00    -0.06   0.01 -0.85       0.22
cohort.squared      0.05     0.07  -0.05  0.34      -0.51              -0.50

> nobs(model5.3.5)
[1] 1580
> round(coeftest(model5.3.5, vcov = vcovHAC(model5.3.5)),2)

t test of coefficients:

                   Estimate Std. Error t value Pr(>|t|)
(Intercept)            0.68       0.03   22.46   <2e-16 ***
government             0.03       0.01    3.80   <2e-16 ***
cabinet                0.01       0.01    1.28     0.20
minority              -0.02       0.01   -1.68     0.09 .
no.term                0.00       0.01   -0.24     0.81
turnout                0.09       0.02    5.30   <2e-16 ***
el.effective          -0.01       0.01   -0.98     0.33
el.total.vote.mean     0.00       0.00   -0.69     0.49
maritime              -0.07       0.01   -6.00   <2e-16 ***
quebec                -0.05       0.01   -6.38   <2e-16 ***
west                  -0.11       0.02   -5.50   <2e-16 ***
parliament             0.05       0.01    6.14   <2e-16 ***
parliament.squared     0.00       0.00   -5.06   <2e-16 ***
cohort                 0.00       0.01   -0.46     0.65
cohort.squared         0.00       0.00    0.28     0.78
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
>
> model5.3.5 <- glm(model5.3.5,dat=lib.p1,family=quasibinomial(logit))
> round(coeftest(model5.3.5, vcov = vcovHAC(model5.3.5)),2)

z test of coefficients:

                   Estimate Std. Error z value Pr(>|z|)
(Intercept)            0.51       0.30    1.70     0.09 .
government             0.49       0.10    4.94   <2e-16 ***
cabinet                0.29       0.16    1.85     0.06 .
minority              -1.25       0.30   -4.14   <2e-16 ***
no.term                0.01       0.10    0.13     0.89
turnout                1.04       0.21    4.87   <2e-16 ***
el.effective          -0.04       0.08   -0.44     0.66
el.total.vote.mean     0.00       0.00   -1.77     0.08 .
maritime              -0.82       0.12   -6.59   <2e-16 ***
quebec                -0.69       0.10   -6.73   <2e-16 ***
west                  -1.66       0.18   -9.28   <2e-16 ***
parliament             0.26       0.12    2.24     0.03 *
```

```
parliament.squared     0.00       0.00    0.24     0.81
cohort                 0.02       0.12    0.15     0.88
cohort.squared         0.00       0.00   -0.44     0.66
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

> 
> ##################################
> #Appendix 5.A.6 Liberal 16th-40th#
> ##################################
> 
> model5.3.6 <- lm(m1,data=lib.p2)
> summary(model5.3.6,2)

Call:
lm(formula = m1, data = lib.p2)

Residuals:
     Min       1Q   Median       3Q      Max 
-0.80906 -0.00671  0.00496  0.01852  0.08742 

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)    
(Intercept)         7.340e-01  1.487e-02  49.372  < 2e-16 ***
government         -1.274e-02  2.397e-03  -5.316 1.13e-07 ***
cabinet             6.729e-03  2.058e-03   3.270  0.00109 ** 
minority           -1.701e-02  1.956e-03  -8.697  < 2e-16 ***
no.term             2.864e-03  1.755e-03   1.632  0.10286    
turnout             2.506e-02  5.278e-03   4.748 2.15e-06 ***
el.effective        7.780e-03  1.770e-03   4.396 1.14e-05 ***
el.total.vote.mean -4.977e-08  6.678e-08  -0.745  0.45618    
maritime            3.757e-03  2.644e-03   1.421  0.15537    
quebec             -1.638e-03  2.014e-03  -0.813  0.41629    
west               -1.713e-02  2.727e-03  -6.281 3.84e-10 ***
parliament          1.195e-02  2.520e-03   4.741 2.23e-06 ***
parliament.squared -2.579e-04  3.481e-05  -7.409 1.64e-13 ***
cohort              4.947e-03  2.304e-03   2.147  0.03188 *  
cohort.squared     -3.920e-05  3.150e-05  -1.245  0.21338    
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.04514 on 3048 degrees of freedom
Multiple R-squared:  0.1473,
  Adjusted R-squared:  0.1434 
F-statistic:  37.6 on 14 and 3048 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                   (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government         -0.03                                                                                   
cabinet             0.19       -0.34                                                                     
minority           -0.01        0.19       0.13                                                          
no.term            -0.18        0.05      -0.04   -0.03                                                 
turnout            -0.15       -0.19      -0.12   -0.32     0.02                                        
el.effective       -0.16       -0.02       0.13   -0.06     0.10   -0.05                                
el.total.vote.mean  0.11        0.02      -0.08    0.00     0.05    0.02   -0.29                        
maritime           -0.07        0.05      -0.02   -0.01     0.05   -0.04    0.08         0.14          
quebec             -0.04       -0.03       0.01   -0.07    -0.01    0.07    0.14         0.06          
west               -0.11        0.03      -0.10    0.04     0.07   -0.04   -0.26         0.19          
parliament         -0.34       -0.05      -0.11    0.05    -0.62    0.00   -0.08        -0.08          
parliament.squared  0.56        0.06       0.12   -0.07     0.00   -0.01    0.04         0.04          
cohort             -0.05        0.01       0.05   -0.02     0.69   -0.01    0.05         0.03          
cohort.squared     -0.07        0.00      -0.07    0.04    -0.02    0.01   -0.01        -0.01          
                   maritime quebec west  parliament parliament.squared cohort
government                                                                    
cabinet                                                                       
minority                                                                      
no.term                                                                       
turnout                                                                       
el.effective                                                                  
el.total.vote.mean                                                            
maritime                                                                      
```

```
quebec               0.35
west                 0.25     0.31
parliament          -0.03    -0.08  -0.01
parliament.squared   0.01     0.11  -0.03 -0.76
cohort               0.02     0.04   0.07 -0.90       0.58
cohort.squared       0.00    -0.06  -0.03  0.64      -0.83              -0.71
```

```
> nobs(model5.3.6)
[1] 3063
> round(coeftest(model5.3.6, vcov = vcovHAC(model5.3.6)),2)

t test of coefficients:

                   Estimate Std. Error t value Pr(>|t|)
(Intercept)            0.73       0.02   34.79   <2e-16 ***
government            -0.01       0.00   -4.58   <2e-16 ***
cabinet                0.01       0.00    4.02   <2e-16 ***
minority              -0.02       0.00   -7.66   <2e-16 ***
no.term                0.00       0.00    0.90     0.37
turnout                0.03       0.01    4.14   <2e-16 ***
el.effective           0.01       0.00    3.74   <2e-16 ***
el.total.vote.mean     0.00       0.00   -1.24     0.21
maritime               0.00       0.00    2.27     0.02 *
quebec                 0.00       0.00   -1.00     0.32
west                  -0.02       0.00   -4.67   <2e-16 ***
parliament             0.01       0.00    2.63     0.01 **
parliament.squared     0.00       0.00   -5.83   <2e-16 ***
cohort                 0.00       0.00    1.08     0.28
cohort.squared         0.00       0.00   -0.89     0.38
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
>
> model5.3.6 <- glm(model5.3.6,dat=lib.p2,family=quasibinomial(logit))
> round(coeftest(model5.3.6, vcov = vcovHAC(model5.3.6)),2)

z test of coefficients:

                   Estimate Std. Error z value Pr(>|z|)
(Intercept)           -6.07       0.68   -8.91   <2e-16 ***
government            -0.59       0.15   -3.96   <2e-16 ***
cabinet                0.56       0.10    5.39   <2e-16 ***
minority              -0.48       0.11   -4.48   <2e-16 ***
no.term                0.11       0.11    0.97     0.33
turnout                1.06       0.25    4.16   <2e-16 ***
el.effective           0.24       0.09    2.65     0.01 **
el.total.vote.mean     0.00       0.00   -0.29     0.78
maritime               0.17       0.11    1.55     0.12
quebec                -0.08       0.09   -0.85     0.40
west                  -0.70       0.11   -6.26   <2e-16 ***
parliament             0.57       0.15    3.77   <2e-16 ***
parliament.squared    -0.01       0.00   -8.33   <2e-16 ***
cohort                 0.15       0.15    1.05     0.29
cohort.squared         0.00       0.00   -0.44     0.66
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
>
################################################################################################################
##########################
>
################################################################################################################
##########################
> #Appendix 5.B: Replication of Table 5.3, The Determinants of Individual Party Loyalty (Cumulative Analysis)
with government motions only#
>
################################################################################################################
##########################
```

```
>
#############################################################################################################
#########################
>
> rm(list=ls())
>
> #Prep data
>
> library(mfx);library(car)
Loading required package: carData
>
> data <- read.csv(file="~/Dropbox/Canada-Manuscript/Analysis/Loyalty-1-40-Gov.csv",header =TRUE)
>
> ###########################################################################################
> #Use Setup-House-Loyalty-1 and Setup-House-Loyalty-1 to make data1 for government votes#
> ###########################################################################################
>
> ######################
> #Setup-House-Loyalty-1#
> ######################
>
> ############
> #1.1 Region#
> ############
>
> data$region <- recode(data$province, "'Quebec'=1;'Ontario'=2;'Ontario (Division)'=2;'New Brunswick'=3;'Nova
Scotia'=3;'Prince Edward Island'=3;'Newfoundland and
Labrador'=3;'Manitoba'=4;'Saskatchewan'=4;'Alberta'=4;'British Columbia'=4;'Northwest
Territories'=4;'Yukon'=4;'Nunavut'=4")
> data$region <- as.numeric(data$region)
> data$ontario <- recode(data$region,"1=0;2=1;3=0;4=0")
> data$quebec <- recode(data$region,"1=1;2=0;3=0;4=0")
> data$west <- recode(data$region,"1=0;2=0;3=0;4=1")
> data$maritime <- recode(data$region,"1=0;2=0;3=1;4=0")
>
> ######################
> #1.2 Party affiliation#
> ######################
>
> data$conservative <- recode(data$party.code,
"'1'='1';'2'='0';'3'='0';'6'='0';'22'='0';'33'='0';'35'='0';'44'='0';'55'='0';'77'='0';'777'='0'")
> data$liberal <- recode(data$party.code,
"'1'='0';'2'='1';'3'='0';'6'='0';'22'='0';'33'='0';'35'='0';'44'='0';'55'='0';'77'='0';'777'='0'")
> data$progressive <- recode(data$party.code,
"'1'='0';'2'='0';'3'='0';'6'='0';'22'='1';'33'='0';'35'='0';'44'='0';'55'='0';'77'='0';'777'='0'")
> data$ndp <- recode(data$party.code,
"'1'='0';'2'='0';'3'='0';'6'='0';'22'='0';'33'='1';'35'='0';'44'='0';'55'='0';'77'='0';'777'='0'")
> data$united.farmers <- recode(data$party.code,
"'1'='0';'2'='0';'3'='0';'6'='0';'22'='0';'33'='0';'35'='1';'44'='0';'55'='0';'77'='0';'777'='0'")
> data$ralliement.creditiste <- recode(data$party.code,
"'1'='0';'2'='0';'3'='0';'6'='0';'22'='0';'33'='0';'35'='0';'44'='0';'55'='0';'77'='0';'777'='1'")
> data$social.credit <- recode(data$party.code,
"'1'='0';'2'='0';'3'='0';'6'='0';'22'='0';'33'='0';'35'='0';'44'='0';'55'='0';'77'='1';'777'='0'")
> data$bloc <- recode(data$party.code,
"'1'='0';'2'='0';'3'='0';'6'='0';'22'='0';'33'='0';'35'='0';'44'='1';'55'='0';'77'='0';'777'='0'")
> data$reform <- recode(data$party.code,
"'1'='0';'2'='0';'3'='0';'6'='0';'22'='0';'33'='0';'35'='0';'44'='0';'55'='1';'77'='0';'777'='0'")
> data$third <- recode(data$party.code,
"'1'='0';'2'='0';'3'='1';'6'='0';'22'='0';'33'='0';'35'='0';'44'='0';'55'='0';'77'='0';'777'='0'")
> data$independent <- recode(data$party.code,
"'1'='0';'2'='0';'3'='0';'6'='1';'22'='0';'33'='0';'35'='0';'44'='0';'55'='0';'77'='0';'777'='0'")
>
> ###################
> #1.3 In government#
> ###################
>
> data$government <- ifelse(data$parliament==1 & data$conservative==1,1,
+ ifelse(data$parliament==2 & data$conservative==1,1,
+ ifelse(data$parliament==3 & data$liberal==1,1,
+ ifelse(data$parliament==4 & data$conservative==1,1,
+ ifelse(data$parliament==5 & data$conservative==1,1,
```

```
+ ifelse(data$parliament==6 & data$conservative==1,1,
+ ifelse(data$parliament==7 & data$conservative==1,1,
+ ifelse(data$parliament==8 & data$liberal==1,1,
+ ifelse(data$parliament==9 & data$liberal==1,1,
+ ifelse(data$parliament==10 & data$liberal==1,1,
+ ifelse(data$parliament==11 & data$liberal==1,1,
+ ifelse(data$parliament==12 & data$conservative==1,1,
+ ifelse(data$parliament==13 & data$conservative==1,1,
+ ifelse(data$parliament==14 & data$liberal==1,1,
+ ifelse(data$parliament==15 & data$liberal==1,1,
+ ifelse(data$parliament==16 & data$liberal==1,1,
+ ifelse(data$parliament==17 & data$conservative==1,1,
+ ifelse(data$parliament==18 & data$liberal==1,1,
+ ifelse(data$parliament==19 & data$liberal==1,1,
+ ifelse(data$parliament==20 & data$liberal==1,1,
+ ifelse(data$parliament==21 & data$liberal==1,1,
+ ifelse(data$parliament==22 & data$liberal==1,1,
+ ifelse(data$parliament==23 & data$conservative==1,1,
+ ifelse(data$parliament==24 & data$conservative==1,1,
+ ifelse(data$parliament==25 & data$conservative==1,1,
+ ifelse(data$parliament==26 & data$liberal==1,1,
+ ifelse(data$parliament==27 & data$liberal==1,1,
+ ifelse(data$parliament==28 & data$liberal==1,1,
+ ifelse(data$parliament==29 & data$liberal==1,1,
+ ifelse(data$parliament==30 & data$liberal==1,1,
+ ifelse(data$parliament==31 & data$conservative==1,1,
+ ifelse(data$parliament==32 & data$liberal==1,1,
+ ifelse(data$parliament==33 & data$conservative==1,1,
+ ifelse(data$parliament==34 & data$conservative==1,1,
+ ifelse(data$parliament==35 & data$liberal==1,1,
+ ifelse(data$parliament==36 & data$liberal==1,1,
+ ifelse(data$parliament==37 & data$liberal==1,1,
+ ifelse(data$parliament==38 & data$liberal==1,1,
+ ifelse(data$parliament==39 & data$conservative==1,1,
+ ifelse(data$parliament==40 & data$conservative==1,1,0))))))))))))))))))))))))))))))))))))))))
>
> ##########################
> #1.4 Minority government#
> ##########################
>
> data$minority <- ifelse(data$parliament==14 | data$parliament==15  | data$parliament==16  |
data$parliament==23 | data$parliament==25 | data$parliament==26 | data$parliament==27 | data$parliament==29 |
data$parliament==31 | data$parliament==38 | data$parliament==39 | data$parliament==40,1,0)
>
> ##############
> #1.5 Cabinet#
> ##############
>
> data$ministry[is.na(data$ministry)] <- 0
> data$secratary[is.na(data$secratary)] <- 0
> data$cabinet <- ifelse(data$ministry==1 | data$secratary==1,1,0)
>
> #############
> #1.6 Cohorts#
> #############
>
> data$cohort <- ifelse(data$parliament==1 & data$no.term==1,1,
+ ifelse(data$parliament==2 & data$no.term==1,2,
+ ifelse(data$parliament==3 & data$no.term==1,3,
+ ifelse(data$parliament==4 & data$no.term==1,4,
+ ifelse(data$parliament==5 & data$no.term==1,5,
+ ifelse(data$parliament==6 & data$no.term==1,6,
+ ifelse(data$parliament==7 & data$no.term==1,7,
+ ifelse(data$parliament==8 & data$no.term==1,8,
+ ifelse(data$parliament==9 & data$no.term==1,9,
+ ifelse(data$parliament==10 & data$no.term==1,10,
+ ifelse(data$parliament==11 & data$no.term==1,11,
+ ifelse(data$parliament==12 & data$no.term==1,12,
+ ifelse(data$parliament==13 & data$no.term==1,13,
+ ifelse(data$parliament==14 & data$no.term==1,14,
+ ifelse(data$parliament==15 & data$no.term==1,15,
```

```
+ ifelse(data$parliament==16 & data$no.term==1,16,
+ ifelse(data$parliament==17 & data$no.term==1,17,
+ ifelse(data$parliament==18 & data$no.term==1,18,
+ ifelse(data$parliament==19 & data$no.term==1,19,
+ ifelse(data$parliament==20 & data$no.term==1,20,
+ ifelse(data$parliament==21 & data$no.term==1,21,
+ ifelse(data$parliament==22 & data$no.term==1,22,
+ ifelse(data$parliament==23 & data$no.term==1,23,
+ ifelse(data$parliament==24 & data$no.term==1,24,
+ ifelse(data$parliament==25 & data$no.term==1,25,
+ ifelse(data$parliament==26 & data$no.term==1,26,
+ ifelse(data$parliament==27 & data$no.term==1,27,
+ ifelse(data$parliament==28 & data$no.term==1,28,
+ ifelse(data$parliament==29 & data$no.term==1,29,
+ ifelse(data$parliament==30 & data$no.term==1,30,
+ ifelse(data$parliament==31 & data$no.term==1,31,
+ ifelse(data$parliament==32 & data$no.term==1,32,
+ ifelse(data$parliament==33 & data$no.term==1,33,
+ ifelse(data$parliament==34 & data$no.term==1,34,
+ ifelse(data$parliament==35 & data$no.term==1,35,
+ ifelse(data$parliament==36 & data$no.term==1,36,
+ ifelse(data$parliament==37 & data$no.term==1,37,
+ ifelse(data$parliament==38 & data$no.term==1,38,
+ ifelse(data$parliament==39 & data$no.term==1,39,
+ ifelse(data$parliament==40 & data$no.term==1,40,0))))))))))))))))))))))))))))))))))))))))
>
> #Replace missing values
> #11082 rows
>
> control <- data
> control$id22 <- round(control$id2,digits=0)
>
> #Merge to replicate NAs
>
> tmp <- data.frame(data$id2,data$cohort)
> colnames(tmp) <- c("id2","cohort.match")
> tmp$id22 <- round(tmp$id2,digits=0)
> tmp <- tmp[,-1]
> tmp <- subset(tmp,tmp$cohort>0)
> dat <- merge(control, tmp, all.x = FALSE)
> dat <- unique(dat) #11082
>
> #add individual cohorts
>
> data <- dat
>
> data$cohort1 <- ifelse(data$cohort.match==1,1,0)
> data$cohort2 <- ifelse(data$cohort.match==2,1,0)
> data$cohort3 <- ifelse(data$cohort.match==3,1,0)
> data$cohort4 <- ifelse(data$cohort.match==4,1,0)
> data$cohort5 <- ifelse(data$cohort.match==5,1,0)
> data$cohort6 <- ifelse(data$cohort.match==6,1,0)
> data$cohort7 <- ifelse(data$cohort.match==7,1,0)
> data$cohort8 <- ifelse(data$cohort.match==8,1,0)
> data$cohort9 <- ifelse(data$cohort.match==9,1,0)
> data$cohort10 <- ifelse(data$cohort.match==10,1,0)
> data$cohort11 <- ifelse(data$cohort.match==11,1,0)
> data$cohort12 <- ifelse(data$cohort.match==12,1,0)
> data$cohort13 <- ifelse(data$cohort.match==13,1,0)
> data$cohort14 <- ifelse(data$cohort.match==14,1,0)
> data$cohort15 <- ifelse(data$cohort.match==15,1,0)
> data$cohort16 <- ifelse(data$cohort.match==16,1,0)
> data$cohort17 <- ifelse(data$cohort.match==17,1,0)
> data$cohort18 <- ifelse(data$cohort.match==18,1,0)
> data$cohort19 <- ifelse(data$cohort.match==19,1,0)
> data$cohort20 <- ifelse(data$cohort.match==20,1,0)
> data$cohort21 <- ifelse(data$cohort.match==21,1,0)
> data$cohort22 <- ifelse(data$cohort.match==22,1,0)
> data$cohort23 <- ifelse(data$cohort.match==23,1,0)
> data$cohort24 <- ifelse(data$cohort.match==24,1,0)
> data$cohort25 <- ifelse(data$cohort.match==25,1,0)
```

```
> data$cohort26 <- ifelse(data$cohort.match==26,1,0)
> data$cohort27 <- ifelse(data$cohort.match==27,1,0)
> data$cohort28 <- ifelse(data$cohort.match==28,1,0)
> data$cohort29 <- ifelse(data$cohort.match==29,1,0)
> data$cohort30 <- ifelse(data$cohort.match==30,1,0)
> data$cohort31 <- ifelse(data$cohort.match==31,1,0)
> data$cohort32 <- ifelse(data$cohort.match==32,1,0)
> data$cohort33 <- ifelse(data$cohort.match==33,1,0)
> data$cohort34 <- ifelse(data$cohort.match==34,1,0)
> data$cohort35 <- ifelse(data$cohort.match==35,1,0)
> data$cohort36 <- ifelse(data$cohort.match==36,1,0)
> data$cohort37 <- ifelse(data$cohort.match==37,1,0)
> data$cohort38 <- ifelse(data$cohort.match==38,1,0)
> data$cohort39 <- ifelse(data$cohort.match==39,1,0)
> data$cohort40 <- ifelse(data$cohort.match==40,1,0)
>
> ################
> #1.7 parliament#
> ################
>
> data$parl1 <- ifelse(data$parliament==1,1,0)
> data$parl2 <- ifelse(data$parliament==2,1,0)
> data$parl3 <- ifelse(data$parliament==3,1,0)
> data$parl4 <- ifelse(data$parliament==4,1,0)
> data$parl5 <- ifelse(data$parliament==5,1,0)
> data$parl6 <- ifelse(data$parliament==6,1,0)
> data$parl7 <- ifelse(data$parliament==7,1,0)
> data$parl8 <- ifelse(data$parliament==8,1,0)
> data$parl9 <- ifelse(data$parliament==9,1,0)
> data$parl10 <- ifelse(data$parliament==10,1,0)
> data$parl11 <- ifelse(data$parliament==11,1,0)
> data$parl12 <- ifelse(data$parliament==12,1,0)
> data$parl13 <- ifelse(data$parliament==13,1,0)
> data$parl14 <- ifelse(data$parliament==14,1,0)
> data$parl15 <- ifelse(data$parliament==15,1,0)
> data$parl16 <- ifelse(data$parliament==16,1,0)
> data$parl17 <- ifelse(data$parliament==17,1,0)
> data$parl18 <- ifelse(data$parliament==18,1,0)
> data$parl19 <- ifelse(data$parliament==19,1,0)
> data$parl20 <- ifelse(data$parliament==20,1,0)
> data$parl21 <- ifelse(data$parliament==21,1,0)
> data$parl22 <- ifelse(data$parliament==22,1,0)
> data$parl23 <- ifelse(data$parliament==23,1,0)
> data$parl24 <- ifelse(data$parliament==24,1,0)
> data$parl25 <- ifelse(data$parliament==25,1,0)
> data$parl26 <- ifelse(data$parliament==26,1,0)
> data$parl27 <- ifelse(data$parliament==27,1,0)
> data$parl28 <- ifelse(data$parliament==28,1,0)
> data$parl29 <- ifelse(data$parliament==29,1,0)
> data$parl30 <- ifelse(data$parliament==30,1,0)
> data$parl31 <- ifelse(data$parliament==31,1,0)
> data$parl32 <- ifelse(data$parliament==32,1,0)
> data$parl33 <- ifelse(data$parliament==33,1,0)
> data$parl34 <- ifelse(data$parliament==34,1,0)
> data$parl35 <- ifelse(data$parliament==35,1,0)
> data$parl36 <- ifelse(data$parliament==36,1,0)
> data$parl37 <- ifelse(data$parliament==37,1,0)
> data$parl38 <- ifelse(data$parliament==38,1,0)
> data$parl39 <- ifelse(data$parliament==39,1,0)
> data$parl40 <- ifelse(data$parliament==40,1,0)
>
> ###################################
> #1.8 Parliament and Cohort squared#
> ###################################
>
> data$parliament.squared <- data$parliament * data$parliament
> data$cohort.squared <- data$cohort.match * data$cohort.match
>
> ##############################
> #1.9 Professions of candidates#
> ##############################
```

```
>
> occ <- data.frame(data$occupation)
> occ$data.occupation <-
chartr("ÊÈÉËêéèëÀÂÄàâäÔôÙÛÜùûüŸÿÇçÎÏîï","EEEEeeeeAAAaaaOoUUUuuuYyCcIIii",occ$data.occupation)
> occ$data.occupation <- tolower(occ$data.occupation)
> data$occ <- occ$data.occupation
>
> #Farmer
>
> c1 <- apply(occ, c(1,2), function(x) grepl('farm',ignore.case=TRUE,fixed=FALSE,x))
> c2 <- apply(occ, c(1,2), function(x) grepl('agr',ignore.case=TRUE,fixed=FALSE,x))
> c3 <- apply(occ, c(1,2), function(x) grepl('ranch',ignore.case=TRUE,fixed=FALSE,x))
> c4 <- apply(occ, c(1,2), function(x) grepl('cattle',ignore.case=TRUE,fixed=FALSE,x))
> c5 <- apply(occ, c(1,2), function(x) grepl('poultry',ignore.case=TRUE,fixed=FALSE,x))
> c6 <- apply(occ, c(1,2), function(x) grepl('grower',ignore.case=TRUE,fixed=FALSE,x))
>
> data$occupation.farmer <- ifelse(c1 == TRUE, 1, ifelse(c2==TRUE,1, ifelse(c3==TRUE,1,  ifelse(c4==TRUE,1,
ifelse(c5==TRUE, 1, ifelse(c6==TRUE, 1,0))))))
>
> #Law
>
> c1 <- apply(occ, c(1,2), function(x) grepl('lawyer',ignore.case=TRUE,fixed=FALSE,x))
> c2 <- apply(occ, c(1,2), function(x) grepl('attor',ignore.case=TRUE,fixed=FALSE,x))
> c3 <- apply(occ, c(1,2), function(x) grepl('barr',ignore.case=TRUE,fixed=FALSE,x))
> c4 <- apply(occ, c(1,2), function(x) grepl('counsel',ignore.case=TRUE,fixed=FALSE,x))
> c5 <- apply(occ, c(1,2), function(x) grepl('prosec',ignore.case=TRUE,fixed=FALSE,x))
> c6 <- apply(occ, c(1,2), function(x) grepl('notary',ignore.case=TRUE,fixed=FALSE,x))
> c7 <- apply(occ, c(1,2), function(x) grepl('solicitor',ignore.case=TRUE,fixed=FALSE,x))
>
> data$occupation.lawyer <- ifelse(c1 == TRUE, 1, ifelse(c2==TRUE,1, ifelse(c3==TRUE,1,  ifelse(c4==TRUE,1,
ifelse(c5==TRUE, 1, ifelse(c6==TRUE, 1, ifelse(c7==TRUE, 1,0)))))))
>
> #Merchant-Business-Management
>
> c1 <- apply(occ, c(1,2), function(x) grepl('business',ignore.case=TRUE,fixed=FALSE,x))
> c2 <- apply(occ, c(1,2), function(x) grepl('merchant',ignore.case=TRUE,fixed=FALSE,x))
> c3 <- apply(occ, c(1,2), function(x) grepl('manage',ignore.case=TRUE,fixed=FALSE,x))
> c4 <- apply(occ, c(1,2), function(x) grepl('industrialist',ignore.case=TRUE,fixed=FALSE,x))
> c5 <- apply(occ, c(1,2), function(x) grepl('owner',ignore.case=TRUE,fixed=FALSE,x))
> c6 <- apply(occ, c(1,2), function(x) grepl('manufacturer',ignore.case=TRUE,fixed=FALSE,x))
> c7 <- apply(occ, c(1,2), function(x) grepl('company',ignore.case=TRUE,fixed=FALSE,x))
>
> data$occupation.business <- ifelse(c1 == TRUE, 1, ifelse(c2==TRUE,1, ifelse(c3==TRUE,1, ifelse(c3==TRUE,1,
ifelse(c4==TRUE,1, ifelse(c5==TRUE,1, ifelse(c6==TRUE,1, ifelse(c7==TRUE,1,0)))))))
>
> #Education
>
> c1 <- apply(occ, c(1,2), function(x) grepl('educ',ignore.case=TRUE,fixed=FALSE,x))
> c2 <- apply(occ, c(1,2), function(x) grepl('professor',ignore.case=TRUE,fixed=FALSE,x))
> c3 <- apply(occ, c(1,2), function(x) grepl('tutor',ignore.case=TRUE,fixed=FALSE,x))
> c4 <- apply(occ, c(1,2), function(x) grepl('graduate',ignore.case=TRUE,fixed=FALSE,x))
> c5 <- apply(occ, c(1,2), function(x) grepl('teach',ignore.case=TRUE,fixed=FALSE,x))
> c6 <- apply(occ, c(1,2), function(x) grepl('school',ignore.case=TRUE,fixed=FALSE,x))
> c7 <- apply(occ, c(1,2), function(x) grepl('lecturer',ignore.case=TRUE,fixed=FALSE,x))
> c8 <- apply(occ, c(1,2), function(x) grepl('instructor',ignore.case=TRUE,fixed=FALSE,x))
>
> data$occupation.educ <- ifelse(c1 == TRUE, 1, ifelse(c2==TRUE,1, ifelse(c3==TRUE,1,  ifelse(c4==TRUE,1,
ifelse(c5==TRUE, 1, ifelse(c6==TRUE, 1, ifelse(c7==TRUE, 1, ifelse(c8==TRUE, 1,0)))))))
>
> #health
>
> c1 <- apply(occ, c(1,2), function(x) grepl('physician',ignore.case=TRUE,fixed=FALSE,x))
> c2 <- apply(occ, c(1,2), function(x) grepl('doctor',ignore.case=TRUE,fixed=FALSE,x))
> c3 <- apply(occ, c(1,2), function(x) grepl('cardiologist',ignore.case=TRUE,fixed=FALSE,x))
> c4 <- apply(occ, c(1,2), function(x) grepl('coroner',ignore.case=TRUE,fixed=FALSE,x))
> c5 <- apply(occ, c(1,2), function(x) grepl('gynaecologist',ignore.case=TRUE,fixed=FALSE,x))
> c6 <- apply(occ, c(1,2), function(x) grepl('surgeon',ignore.case=TRUE,fixed=FALSE,x))
> c7 <- apply(occ, c(1,2), function(x) grepl('obstetrician',ignore.case=TRUE,fixed=FALSE,x))
> c8 <- apply(occ, c(1,2), function(x) grepl('psy',ignore.case=TRUE,fixed=FALSE,x))
> c9 <- apply(occ, c(1,2), function(x) grepl('nurs',ignore.case=TRUE,fixed=FALSE,x))
> c10 <- apply(occ, c(1,2), function(x) grepl('dentist',ignore.case=TRUE,fixed=FALSE,x))
```

```
> c11 <- apply(occ, c(1,2), function(x) grepl('pharmacist',ignore.case=TRUE,fixed=FALSE,x))
> c12 <- apply(occ, c(1,2), function(x) grepl('chiro',ignore.case=TRUE,fixed=FALSE,x))
> c13 <- apply(occ, c(1,2), function(x) grepl('health',ignore.case=TRUE,fixed=FALSE,x))
> c14 <- apply(occ, c(1,2), function(x) grepl('optometrist',ignore.case=TRUE,fixed=FALSE,x))
> c15 <- apply(occ, c(1,2), function(x) grepl('dental',ignore.case=TRUE,fixed=FALSE,x))
>
> data$occupation.health <- ifelse(c1 == TRUE, 1, ifelse(c2==TRUE,1, ifelse(c3==TRUE,1,  ifelse(c4==TRUE,1,
ifelse(c5==TRUE, 1,ifelse(c5==TRUE, 1, ifelse(c6==TRUE, 1, ifelse(c7==TRUE, 1, ifelse(c8==TRUE, 1,
ifelse(c9==TRUE, 1, ifelse(c10==TRUE, 1, ifelse(c11==TRUE, 1, ifelse(c12==TRUE, 1, ifelse(c13==TRUE, 1,
ifelse(c14==TRUE, 1, ifelse(c15==TRUE, 1,0))))))))))))))
>
> #Media
>
> c1 <- apply(occ, c(1,2), function(x) grepl('journalist',ignore.case=TRUE,fixed=FALSE,x))
> c2 <- apply(occ, c(1,2), function(x) grepl('reporter',ignore.case=TRUE,fixed=FALSE,x))
> c3 <- apply(occ, c(1,2), function(x) grepl('news',ignore.case=TRUE,fixed=FALSE,x))
> c4 <- apply(occ, c(1,2), function(x) grepl('editor',ignore.case=TRUE,fixed=FALSE,x))
> c5 <- apply(occ, c(1,2), function(x) grepl('columnist',ignore.case=TRUE,fixed=FALSE,x))
> c6 <- apply(occ, c(1,2), function(x) grepl('broadcast',ignore.case=TRUE,fixed=FALSE,x))
> c7 <- apply(occ, c(1,2), function(x) grepl('show',ignore.case=TRUE,fixed=FALSE,x))
>
> data$occupation.media <- ifelse(c1 == TRUE, 1, ifelse(c2==TRUE,1, ifelse(c2==TRUE,1, ifelse(c3==TRUE,1,
ifelse(c4==TRUE,1, ifelse(c5==TRUE,1, ifelse(c6==TRUE,1, ifelse(c7==TRUE,1,0)))))))
>
> #Other
> sum <- data$occupation.farmer + data$occupation.lawyer + data$occupation.business + data$occupation.educ +
data$occupation.health + data$occupation.media
> data$occupation.other <- ifelse(sum == 0, 1, 0)
>
> ############
> #SAVE WORK#
> ############
>
> #clean data
> drops <- c("id22","X","swithc.check","cohort","occ")
> data <- data[ , !(names(data) %in% drops)]
> colnames(data)[43] <- "cohort"
>
> #save work
> write.csv(data,file = "~/Dropbox/Canada-Manuscript/Analysis/loyalty-coded-gov.csv")
>
> ########################
> #Set-Up-House-Loyalty-2#
> ########################
>
> ########################################
> #1.1 Load election data and loyalty data#
> ########################################
>
> rm(list=ls())
>
> data <- read.csv("~/Dropbox/Canada-Manuscript/Analysis/loyalty-coded-gov.csv",header=TRUE)
> effective <- read.csv(file="~/Dropbox/Canada-Manuscript/Analysis/effective.csv",header =TRUE)
>
> #control
> length(effective$i)
[1] 11662
> length(data$id2)
[1] 10829
>
> #data.y:11662 elections (because added 2011 - 2015 election results), delete then 11017 elections.
> #data.x: 11082 MPs
>
> effective <- subset(effective,effective$el.parliament.no < 41)
> effective$el.mp.code <- factor(effective$el.mp.code)
>
> #data.y: 4088 id levels
> #data.x: 4094 id levels
>
> ######################
> #1.2 Merge data files#
```

```
> ######################
>
> dat <- merge(data,effective,by.x=c('id','parliament'),by.y=c('el.mp.code','el.parliament.no'),all.x =
FALSE,all.y = FALSE)
> dat <- subset(dat, select=-c(X.x,X.y))
> write.csv(dat,file = "~/Dropbox/Canada-Manuscript/Analysis/control-merged.csv")
>
> #Note : 11,347 cases are merged, manually load ministerial, contested, mutliple and double elections. 607
have the same parliamentary id.
>
> ############################
> #1.3 Delete cases manually#
> ############################
>
> #Delete midterm elections when recalled, 281 cases Excel=IF(id2.1=id.2,IF(parliament.1=parliament.2,1,0),0)
>
> coucou <- dat
> coucou <- coucou[!(coucou$id2== 1 & coucou$el.riding.code== 211 & coucou$election.date== "1874-10-22"),]
> coucou <- coucou[!(coucou$id2== 11 & coucou$el.riding.code== 370 & coucou$election.date== "1888-08-15"),]
> coucou <- coucou[!(coucou$id2== 21 & coucou$el.riding.code== 201 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 53 & coucou$el.riding.code== 544 & coucou$election.date== "1892-05-19"),]
> coucou <- coucou[!(coucou$id2== 73 & coucou$el.riding.code== 810 & coucou$election.date== "1904-01-30"),]
> coucou <- coucou[!(coucou$id2== 126 & coucou$el.riding.code== 172 & coucou$election.date== "1892-02-13"),]
> coucou <- coucou[!(coucou$id2== 131 & coucou$el.riding.code== 287 & coucou$election.date== "1912-11-19"),]
> coucou <- coucou[!(coucou$id2== 138 & coucou$el.riding.code== 386 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 141 & coucou$el.riding.code== 626 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 183 & coucou$el.riding.code== 247 & coucou$election.date== "1911-10-27"),]
> coucou <- coucou[!(coucou$id2== 189 & coucou$el.riding.code== 263 & coucou$election.date== "1892-02-11"),]
> coucou <- coucou[!(coucou$id2== 190 & coucou$el.riding.code== 684 & coucou$election.date== "1906-02-06"),]
> coucou <- coucou[!(coucou$id2== 196 & coucou$el.riding.code== 810 & coucou$election.date== "1873-11-28"),]
> coucou <- coucou[!(coucou$id2== 197 & coucou$el.riding.code== 578 & coucou$election.date== "1880-11-20"),]
> coucou <- coucou[!(coucou$id2== 277 & coucou$el.riding.code== 131 & coucou$election.date== "1897-04-07"),]
> coucou <- coucou[!(coucou$id2== 297 & coucou$el.riding.code== 723 & coucou$election.date== "1878-11-06"),]
> coucou <- coucou[!(coucou$id2== 308 & coucou$el.riding.code== 131 & coucou$election.date== "1914-11-07"),]
> coucou <- coucou[!(coucou$id2== 314 & coucou$el.riding.code== 626 & coucou$election.date== "1888-05-07"),]
> coucou <- coucou[!(coucou$id2== 322 & coucou$el.riding.code== 37 & coucou$election.date== "1902-03-26"),]
> coucou <- coucou[!(coucou$id2== 338 & coucou$el.riding.code== 278 & coucou$election.date== "1878-11-06"),]
> coucou <- coucou[!(coucou$id2== 360 & coucou$el.riding.code== 238 & coucou$election.date== "1876-07-31"),]
> coucou <- coucou[!(coucou$id2== 392 & coucou$el.riding.code== 268 & coucou$election.date== "1875-05-20"),]
> coucou <- coucou[!(coucou$id2== 394 & coucou$el.riding.code== 654 & coucou$election.date== "1911-10-27"),]
> coucou <- coucou[!(coucou$id2== 395 & coucou$el.riding.code== 397 & coucou$election.date== "1874-11-17"),]
> coucou <- coucou[!(coucou$id2== 395 & coucou$el.riding.code== 397 & coucou$election.date== "1877-05-09"),]
> coucou <- coucou[!(coucou$id2== 416 & coucou$el.riding.code== 75 & coucou$election.date== "1892-03-10"),]
> coucou <- coucou[!(coucou$id2== 455 & coucou$el.riding.code== 836 & coucou$election.date== "1933-10-23"),]
> coucou <- coucou[!(coucou$id2== 458 & coucou$el.riding.code== 458 & coucou$election.date== "1911-09-21"),]
> coucou <- coucou[!(coucou$id2== 466 & coucou$el.riding.code== 392 & coucou$election.date== "1873-12-03"),]
> coucou <- coucou[!(coucou$id2== 466 & coucou$el.riding.code== 530 & coucou$election.date== "1896-07-30"),]
> coucou <- coucou[!(coucou$id2== 467 & coucou$el.riding.code== 5 & coucou$election.date== "1883-07-10"),]
> coucou <- coucou[!(coucou$id2== 467.1 & coucou$el.riding.code== 5 & coucou$election.date== "1883-07-10"),]
> coucou <- coucou[!(coucou$id2== 473 & coucou$el.riding.code== 305 & coucou$election.date== "1896-01-14"),]
> coucou <- coucou[!(coucou$id2== 503 & coucou$el.riding.code== 164 & coucou$election.date== "1870-06-15"),]
> coucou <- coucou[!(coucou$id2== 503 & coucou$el.riding.code== 164 & coucou$election.date== "1878-11-04"),]
> coucou <- coucou[!(coucou$id2== 503 & coucou$el.riding.code== 164 & coucou$election.date== "1887-11-09"),]
> coucou <- coucou[!(coucou$id2== 509 & coucou$el.riding.code== 325 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 579 & coucou$el.riding.code== 352 & coucou$election.date== "1900-01-18"),]
> coucou <- coucou[!(coucou$id2== 579.1 & coucou$el.riding.code== 352 & coucou$election.date== "1900-01-18"),]
> coucou <- coucou[!(coucou$id2== 586 & coucou$el.riding.code== 723 & coucou$election.date== "1977-05-24"),]
> coucou <- coucou[!(coucou$id2== 604 & coucou$el.riding.code== 335 & coucou$election.date== "1882-11-07"),]
> coucou <- coucou[!(coucou$id2== 604 & coucou$el.riding.code== 335 & coucou$election.date== "1885-12-31"),]
> coucou <- coucou[!(coucou$id2== 604 & coucou$el.riding.code== 739 & coucou$election.date== "1911-10-27"),]
> coucou <- coucou[!(coucou$id2== 752 & coucou$el.riding.code== 678 & coucou$election.date== "1888-10-22"),]
> coucou <- coucou[!(coucou$id2== 756 & coucou$el.riding.code== 146 & coucou$election.date== "1873-12-01"),]
> coucou <- coucou[!(coucou$id2== 763 & coucou$el.riding.code== 157 & coucou$election.date== "1871-11-11"),]
> coucou <- coucou[!(coucou$id2== 763 & coucou$el.riding.code== 157 & coucou$election.date== "1878-11-04"),]
> coucou <- coucou[!(coucou$id2== 811 & coucou$el.riding.code== 383 & coucou$election.date== "1892-01-25"),]
> coucou <- coucou[!(coucou$id2== 813 & coucou$el.riding.code== 51 & coucou$election.date== "1873-02-15"),]
> coucou <- coucou[!(coucou$id2== 815 & coucou$el.riding.code== 777 & coucou$election.date== "1896-01-06"),]
> coucou <- coucou[!(coucou$id2== 824 & coucou$el.riding.code== 141 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 824 & coucou$el.riding.code== 141 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 846 & coucou$el.riding.code== 475 & coucou$election.date== "1875-06-19"),]
> coucou <- coucou[!(coucou$id2== 852 & coucou$el.riding.code== 80 & coucou$election.date== "1926-11-09"),]
```

```
> coucou <- coucou[!(coucou$id2== 860 & coucou$el.riding.code== 563 & coucou$election.date== "1892-03-30"),]
> coucou <- coucou[!(coucou$id2== 866 & coucou$el.riding.code== 349 & coucou$election.date== "1875-01-16"),]
> coucou <- coucou[!(coucou$id2== 879 & coucou$el.riding.code== 846 & coucou$election.date== "1896-07-30"),]
> coucou <- coucou[!(coucou$id2== 894 & coucou$el.riding.code== 339 & coucou$election.date== "1892-02-13"),]
> coucou <- coucou[!(coucou$id2== 894 & coucou$el.riding.code== 339 & coucou$election.date== "1896-07-30"),]
> coucou <- coucou[!(coucou$id2== 901 & coucou$el.riding.code== 263 & coucou$election.date== "1892-02-11"),]
> coucou <- coucou[!(coucou$id2== 905 & coucou$el.riding.code== 475 & coucou$election.date== "1873-11-27"),]
> coucou <- coucou[!(coucou$id2== 914 & coucou$el.riding.code== 501 & coucou$election.date== "1874-11-17"),]
> coucou <- coucou[!(coucou$id2== 923 & coucou$el.riding.code== 835 & coucou$election.date== "1911-11-04"),]
> coucou <- coucou[!(coucou$id2== 924 & coucou$el.riding.code== 580 & coucou$election.date== "1875-12-27"),]
> coucou <- coucou[!(coucou$id2== 943 & coucou$el.riding.code== 189 & coucou$election.date== "1872-07-20"),]
> coucou <- coucou[!(coucou$id2== 943 & coucou$el.riding.code== 81 & coucou$election.date== "1873-12-14"),]
> coucou <- coucou[!(coucou$id2== 943 & coucou$el.riding.code== 81 & coucou$election.date== "1875-06-02"),]
> coucou <- coucou[!(coucou$id2== 943 & coucou$el.riding.code== 83 & coucou$election.date== "1887-02-22"),]
> coucou <- coucou[!(coucou$id2== 946 & coucou$el.riding.code== 562 & coucou$election.date== "1896-07-30"),]
> coucou <- coucou[!(coucou$id2== 951 & coucou$el.riding.code== 723 & coucou$election.date== "1900-11-07"),]
> coucou <- coucou[!(coucou$id2== 951 & coucou$el.riding.code== 417 & coucou$election.date== "1902-12-09"),]
> coucou <- coucou[!(coucou$id2== 985 & coucou$el.riding.code== 443 & coucou$election.date== "1926-03-29"),]
> coucou <- coucou[!(coucou$id2== 985 & coucou$el.riding.code== 443 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 995 & coucou$el.riding.code== 316 & coucou$election.date== "1874-12-10"),]
> coucou <- coucou[!(coucou$id2== 995 & coucou$el.riding.code== 316 & coucou$election.date== "1878-11-14"),]
> coucou <- coucou[!(coucou$id2== 997 & coucou$el.riding.code== 238 & coucou$election.date== "1892-01-14"),]
> coucou <- coucou[!(coucou$id2== 1037 & coucou$el.riding.code== 152 & coucou$election.date== "1920-09-20"),]
> coucou <- coucou[!(coucou$id2== 1037.1 & coucou$el.riding.code== 152 & coucou$election.date== "1920-09-20"),]
> coucou <- coucou[!(coucou$id2== 1050 & coucou$el.riding.code== 581 & coucou$election.date== "1919-10-27"),]
> coucou <- coucou[!(coucou$id2== 1050 & coucou$el.riding.code== 581 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 1050 & coucou$el.riding.code== 581 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 1073 & coucou$el.riding.code== 790 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 1074 & coucou$el.riding.code== 223 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 1092 & coucou$el.riding.code== 36 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 1130 & coucou$el.riding.code== 16 & coucou$election.date== "1873-07-07"),]
> coucou <- coucou[!(coucou$id2== 1151 & coucou$el.riding.code== 501 & coucou$election.date== "1885-04-07"),]
> coucou <- coucou[!(coucou$id2== 1153 & coucou$el.riding.code== 55 & coucou$election.date== "1876-11-15"),]
> coucou <- coucou[!(coucou$id2== 1180 & coucou$el.riding.code== 208 & coucou$election.date== "1911-10-27"),]
> coucou <- coucou[!(coucou$id2== 1186 & coucou$el.riding.code== 768 & coucou$election.date== "1929-07-29"),]
> coucou <- coucou[!(coucou$id2== 1202 & coucou$el.riding.code== 582 & coucou$election.date== "1895-04-17"),]
> coucou <- coucou[!(coucou$id2== 1203 & coucou$el.riding.code== 207 & coucou$election.date== "1892-02-12"),]
> coucou <- coucou[!(coucou$id2== 1218 & coucou$el.riding.code== 529 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 1226 & coucou$el.riding.code== 382 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 1228 & coucou$el.riding.code== 351 & coucou$election.date== "1869-07-14"),]
> coucou <- coucou[!(coucou$id2== 1233 & coucou$el.riding.code== 340 & coucou$election.date== "1874-12-29"),]
> coucou <- coucou[!(coucou$id2== 1233 & coucou$el.riding.code== 424 & coucou$election.date== "1878-09-17"),]
> coucou <- coucou[!(coucou$id2== 1233 & coucou$el.riding.code== 392 & coucou$election.date== "1882-06-20"),]
> coucou <- coucou[!(coucou$id2== 1233 & coucou$el.riding.code== 123 & coucou$election.date== "1887-02-22"),]
> coucou <- coucou[!(coucou$id2== 1259 & coucou$el.riding.code== 259 & coucou$election.date== "1887-11-12"),]
> coucou <- coucou[!(coucou$id2== 1259 & coucou$el.riding.code== 259 & coucou$election.date== "1890-02-20"),]
> coucou <- coucou[!(coucou$id2== 1259 & coucou$el.riding.code== 259 & coucou$election.date== "1895-04-17"),]
> coucou <- coucou[!(coucou$id2== 1277 & coucou$el.riding.code== 268 & coucou$election.date== "1875-05-20"),]
> coucou <- coucou[!(coucou$id2== 1290 & coucou$el.riding.code== 123 & coucou$election.date== "1908-10-26"),]
> coucou <- coucou[!(coucou$id2== 1290 & coucou$el.riding.code== 263 & coucou$election.date== "1911-10-27"),]
> coucou <- coucou[!(coucou$id2== 1319 & coucou$el.riding.code== 550 & coucou$election.date== "1878-11-04"),]
> coucou <- coucou[!(coucou$id2== 1325 & coucou$el.riding.code== 399 & coucou$election.date== "1890-05-23"),]
> coucou <- coucou[!(coucou$id2== 1340 & coucou$el.riding.code== 755 & coucou$election.date== "1907-02-28"),]
> coucou <- coucou[!(coucou$id2== 1340 & coucou$el.riding.code== 755 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 1341 & coucou$el.riding.code== 704 & coucou$election.date== "1889-12-18"),]
> coucou <- coucou[!(coucou$id2== 1345 & coucou$el.riding.code== 802 & coucou$election.date== "1905-11-22"),]
> coucou <- coucou[!(coucou$id2== 1382 & coucou$el.riding.code== 399 & coucou$election.date== "1892-01-28"),]
> coucou <- coucou[!(coucou$id2== 1383 & coucou$el.riding.code== 810 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 1399 & coucou$el.riding.code== 436 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 1431 & coucou$el.riding.code== 75 & coucou$election.date== "1869-11-29"),]
> coucou <- coucou[!(coucou$id2== 1435 & coucou$el.riding.code== 690 & coucou$election.date== "1885-02-05"),]
> coucou <- coucou[!(coucou$id2== 1435 & coucou$el.riding.code== 690 & coucou$election.date== "1892-12-13"),]
> coucou <- coucou[!(coucou$id2== 1437 & coucou$el.riding.code== 461 & coucou$election.date== "1892-12-18"),]
> coucou <- coucou[!(coucou$id2== 1441 & coucou$el.riding.code== 567 & coucou$election.date== "1888-03-19"),]
> coucou <- coucou[!(coucou$id2== 1457 & coucou$el.riding.code== 263 & coucou$election.date== "1878-01-29"),]
> coucou <- coucou[!(coucou$id2== 1471 & coucou$el.riding.code== 362 & coucou$election.date== "1873-11-25"),]
> coucou <- coucou[!(coucou$id2== 1478 & coucou$el.riding.code== 109 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 1487 & coucou$el.riding.code== 840 & coucou$election.date== "1901-12-28"),]
> coucou <- coucou[!(coucou$id2== 1499 & coucou$el.riding.code== 678 & coucou$election.date== "1873-12-09"),]
> coucou <- coucou[!(coucou$id2== 1499.1 & coucou$el.riding.code== 678 & coucou$election.date== "1873-12-09"),]
> coucou <- coucou[!(coucou$id2== 1503 & coucou$el.riding.code== 181 & coucou$election.date== "1926-11-02"),]
```

```
> coucou <- coucou[!(coucou$id2== 1513 & coucou$el.riding.code== 61 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 1516 & coucou$el.riding.code== 274 & coucou$election.date== "1869-04-24"),]
> coucou <- coucou[!(coucou$id2== 1516.1 & coucou$el.riding.code== 274 & coucou$election.date== "1869-04-24"),]
> coucou <- coucou[!(coucou$id2== 1520 & coucou$el.riding.code== 323 & coucou$election.date== "1902-02-28"),]
> coucou <- coucou[!(coucou$id2== 1525 & coucou$el.riding.code== 194 & coucou$election.date== "1905-04-25"),]
> coucou <- coucou[!(coucou$id2== 1526 & coucou$el.riding.code== 29 & coucou$election.date== "1880-11-20"),]
> coucou <- coucou[!(coucou$id2== 1533 & coucou$el.riding.code== 601 & coucou$election.date== "1874-10-24"),]
> coucou <- coucou[!(coucou$id2== 1533 & coucou$el.riding.code== 601 & coucou$election.date== "1875-02-20"),]
> coucou <- coucou[!(coucou$id2== 1555 & coucou$el.riding.code== 609 & coucou$election.date== "1892-01-21"),]
> coucou <- coucou[!(coucou$id2== 1556 & coucou$el.riding.code== 626 & coucou$election.date== "1878-11-04"),]
> coucou <- coucou[!(coucou$id2== 1563 & coucou$el.riding.code== 443 & coucou$election.date== "1888-03-10"),]
> coucou <- coucou[!(coucou$id2== 1564 & coucou$el.riding.code== 79 & coucou$election.date== "1887-04-02"),]
> coucou <- coucou[!(coucou$id2== 1590 & coucou$el.riding.code== 235 & coucou$election.date== "1904-02-20"),]
> coucou <- coucou[!(coucou$id2== 1590 & coucou$el.riding.code== 485 & coucou$election.date== "1904-11-03"),]
> coucou <- coucou[!(coucou$id2== 1590 & coucou$el.riding.code== 417 & coucou$election.date== "1917-12-17"),]
> coucou <- coucou[!(coucou$id2== 1592 & coucou$el.riding.code== 624 & coucou$election.date== "1904-01-30"),]
> coucou <- coucou[!(coucou$id2== 1609 & coucou$el.riding.code== 243 & coucou$election.date== "1877-07-02"),]
> coucou <- coucou[!(coucou$id2== 1612 & coucou$el.riding.code== 266 & coucou$election.date== "1892-01-28"),]
> coucou <- coucou[!(coucou$id2== 1658 & coucou$el.riding.code== 775 & coucou$election.date== "1873-12-20"),]
> coucou <- coucou[!(coucou$id2== 1749 & coucou$el.riding.code== 157 & coucou$election.date== "1906-01-04"),]
> coucou <- coucou[!(coucou$id2== 1758 & coucou$el.riding.code== 463 & coucou$election.date== "1874-12-10"),]
> coucou <- coucou[!(coucou$id2== 1762 & coucou$el.riding.code== 784 & coucou$election.date== "1892-02-11"),]
> coucou <- coucou[!(coucou$id2== 1773 & coucou$el.riding.code== 160 & coucou$election.date== "1874-10-20"),]
> coucou <- coucou[!(coucou$id2== 1783 & coucou$el.riding.code== 280 & coucou$election.date== "1894-07-04"),]
> coucou <- coucou[!(coucou$id2== 1794 & coucou$el.riding.code== 606 & coucou$election.date== "1912-10-24"),]
> coucou <- coucou[!(coucou$id2== 1794 & coucou$el.riding.code== 606 & coucou$election.date== "1924-02-27"),]
> coucou <- coucou[!(coucou$id2== 1794 & coucou$el.riding.code== 606 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 1800 & coucou$el.riding.code== 370 & coucou$election.date== "1869-11-29"),]
> coucou <- coucou[!(coucou$id2== 1806 & coucou$el.riding.code== 594 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 1806 & coucou$el.riding.code== 437 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 1815 & coucou$el.riding.code== 702 & coucou$election.date== "1920-09-20"),]
> coucou <- coucou[!(coucou$id2== 1816 & coucou$el.riding.code== 152 & coucou$election.date== "1887-10-27"),]
> coucou <- coucou[!(coucou$id2== 1830 & coucou$el.riding.code== 389 & coucou$election.date== "1874-12-16"),]
> coucou <- coucou[!(coucou$id2== 1849 & coucou$el.riding.code== 238 & coucou$election.date== "1873-11-26"),]
> coucou <- coucou[!(coucou$id2== 1877 & coucou$el.riding.code== 482 & coucou$election.date== "1874-12-22"),]
> coucou <- coucou[!(coucou$id2== 1897 & coucou$el.riding.code== 458 & coucou$election.date== "1880-12-09"),]
> coucou <- coucou[!(coucou$id2== 1902 & coucou$el.riding.code== 75 & coucou$election.date== "1896-07-30"),]
> coucou <- coucou[!(coucou$id2== 1903 & coucou$el.riding.code== 349 & coucou$election.date== "1888-04-03"),]
> coucou <- coucou[!(coucou$id2== 1908 & coucou$el.riding.code== 679 & coucou$election.date== "1906-10-31"),]
> coucou <- coucou[!(coucou$id2== 1908 & coucou$el.riding.code== 679 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 1916 & coucou$el.riding.code== 578 & coucou$election.date== "1896-07-30"),]
> coucou <- coucou[!(coucou$id2== 1917 & coucou$el.riding.code== 424 & coucou$election.date== "1911-10-27"),]
> coucou <- coucou[!(coucou$id2== 1920 & coucou$el.riding.code== 588 & coucou$election.date== "1884-08-19"),]
> coucou <- coucou[!(coucou$id2== 1947 & coucou$el.riding.code== 783 & coucou$election.date== "1874-12-22"),]
> coucou <- coucou[!(coucou$id2== 1950 & coucou$el.riding.code== 648 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 1965 & coucou$el.riding.code== 613 & coucou$election.date== "1874-12-04"),]
> coucou <- coucou[!(coucou$id2== 1971 & coucou$el.riding.code== 795 & coucou$election.date== "1874-12-13"),]
> coucou <- coucou[!(coucou$id2== 1974 & coucou$el.riding.code== 675 & coucou$election.date== "1892-11-02"),]
> coucou <- coucou[!(coucou$id2== 1994 & coucou$el.riding.code== 497 & coucou$election.date== "1878-02-05"),]
> coucou <- coucou[!(coucou$id2== 2004 & coucou$el.riding.code== 61 & coucou$election.date== "1896-06-23"),]
> coucou <- coucou[!(coucou$id2== 2065 & coucou$el.riding.code== 578 & coucou$election.date== "1911-10-27"),]
> coucou <- coucou[!(coucou$id2== 2081 & coucou$el.riding.code== 18 & coucou$election.date== "1881-08-17"),]
> coucou <- coucou[!(coucou$id2== 2083 & coucou$el.riding.code== 54 & coucou$election.date== "1967-11-06"),]
> coucou <- coucou[!(coucou$id2== 2100 & coucou$el.riding.code== 514 & coucou$election.date== "1873-07-07"),]
> coucou <- coucou[!(coucou$id2== 2103 & coucou$el.riding.code== 550 & coucou$election.date== "1888-06-18"),]
> coucou <- coucou[!(coucou$id2== 2105 & coucou$el.riding.code== 529 & coucou$election.date== "1902-01-29"),]
> coucou <- coucou[!(coucou$id2== 2122 & coucou$el.riding.code== 684 & coucou$election.date== "1892-12-21"),]
> coucou <- coucou[!(coucou$id2== 2123 & coucou$el.riding.code== 455 & coucou$election.date== "1892-03-05"),]
> coucou <- coucou[!(coucou$id2== 2128 & coucou$el.riding.code== 298 & coucou$election.date== "1867-11-28"),]
> coucou <- coucou[!(coucou$id2== 2149 & coucou$el.riding.code== 538 & coucou$election.date== "1892-02-11"),]
> coucou <- coucou[!(coucou$id2== 2156 & coucou$el.riding.code== 702 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 2161 & coucou$el.riding.code== 599 & coucou$election.date== "1876-01-21"),]
> coucou <- coucou[!(coucou$id2== 2178 & coucou$el.riding.code== 846 & coucou$election.date== "1990-12-10"),]
> coucou <- coucou[!(coucou$id2== 2181 & coucou$el.riding.code== 440 & coucou$election.date== "1892-02-11"),]
> coucou <- coucou[!(coucou$id2== 2219 & coucou$el.riding.code== 401 & coucou$election.date== "1905-06-13"),]
> coucou <- coucou[!(coucou$id2== 2221 & coucou$el.riding.code== 181 & coucou$election.date== "1875-12-14"),]
> coucou <- coucou[!(coucou$id2== 2246 & coucou$el.riding.code== 351 & coucou$election.date== "1893-01-05"),]
> coucou <- coucou[!(coucou$id2== 2246.1 & coucou$el.riding.code== 351 & coucou$election.date== "1893-01-05"),]
> coucou <- coucou[!(coucou$id2== 2256 & coucou$el.riding.code== 346 & coucou$election.date== "1926-11-09"),]
> coucou <- coucou[!(coucou$id2== 2295 & coucou$el.riding.code== 781 & coucou$election.date== "1919-10-27"),]
> coucou <- coucou[!(coucou$id2== 2334 & coucou$el.riding.code== 407 & coucou$election.date== "1909-10-26"),]
```

```
> coucou <- coucou[!(coucou$id2== 2343 & coucou$el.riding.code== 193 & coucou$election.date== "1901-03-20"),]
> coucou <- coucou[!(coucou$id2== 2345 & coucou$el.riding.code== 476 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 2348 & coucou$el.riding.code== 269 & coucou$election.date== "1996-06-17"),]
> coucou <- coucou[!(coucou$id2== 2354 & coucou$el.riding.code== 797 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 2355 & coucou$el.riding.code== 500 & coucou$election.date== "1888-11-21"),]
> coucou <- coucou[!(coucou$id2== 2399 & coucou$el.riding.code== 134 & coucou$election.date== "1877-03-23"),]
> coucou <- coucou[!(coucou$id2== 2399 & coucou$el.riding.code== 606 & coucou$election.date== "1891-03-05"),]
> coucou <- coucou[!(coucou$id2== 2406 & coucou$el.riding.code== 589 & coucou$election.date== "1892-02-09"),]
> coucou <- coucou[!(coucou$id2== 2466 & coucou$el.riding.code== 846 & coucou$election.date== "1875-06-29"),]
> coucou <- coucou[!(coucou$id2== 2468 & coucou$el.riding.code== 181 & coucou$election.date== "1917-01-27"),]
> coucou <- coucou[!(coucou$id2== 2469 & coucou$el.riding.code== 790 & coucou$election.date== "1909-06-21"),]
> coucou <- coucou[!(coucou$id2== 2469 & coucou$el.riding.code== 846 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 2469 & coucou$el.riding.code== 565 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 2472 & coucou$el.riding.code== 243 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 2475 & coucou$el.riding.code== 574 & coucou$election.date== "1874-09-03"),]
> coucou <- coucou[!(coucou$id2== 2481 & coucou$el.riding.code== 461 & coucou$election.date== "1875-11-26"),]
> coucou <- coucou[!(coucou$id2== 2499 & coucou$el.riding.code== 770 & coucou$election.date== "1874-07-25"),]
> coucou <- coucou[!(coucou$id2== 2502 & coucou$el.riding.code== 775 & coucou$election.date== "1876-09-21"),]
> coucou <- coucou[!(coucou$id2== 2504 & coucou$el.riding.code== 152 & coucou$election.date== "1874-12-17"),]
> coucou <- coucou[!(coucou$id2== 2540 & coucou$el.riding.code== 122 & coucou$election.date== "1892-04-06"),]
> coucou <- coucou[!(coucou$id2== 2553 & coucou$el.riding.code== 594 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 2556 & coucou$el.riding.code== 567 & coucou$election.date== "1892-02-04"),]
> coucou <- coucou[!(coucou$id2== 2560 & coucou$el.riding.code== 518 & coucou$election.date== "1877-05-09"),]
> coucou <- coucou[!(coucou$id2== 2569 & coucou$el.riding.code== 411 & coucou$election.date== "1913-12-13"),]
> coucou <- coucou[!(coucou$id2== 2579 & coucou$el.riding.code== 103 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 2591 & coucou$el.riding.code== 625 & coucou$election.date== "1932-06-27"),]
> coucou <- coucou[!(coucou$id2== 2625 & coucou$el.riding.code== 27 & coucou$election.date== "1906-02-06"),]
> coucou <- coucou[!(coucou$id2== 2649 & coucou$el.riding.code== 452 & coucou$election.date== "1875-06-22"),]
> coucou <- coucou[!(coucou$id2== 2700 & coucou$el.riding.code== 778 & coucou$election.date== "1911-10-27"),]
> coucou <- coucou[!(coucou$id2== 2706 & coucou$el.riding.code== 160 & coucou$election.date== "1880-01-27"),]
> coucou <- coucou[!(coucou$id2== 2738 & coucou$el.riding.code== 74 & coucou$election.date== "1892-12-21"),]
> coucou <- coucou[!(coucou$id2== 2744 & coucou$el.riding.code== 127 & coucou$election.date== "1874-12-30"),]
> coucou <- coucou[!(coucou$id2== 2779 & coucou$el.riding.code== 316 & coucou$election.date== "1882-12-07"),]
> coucou <- coucou[!(coucou$id2== 2779.1 & coucou$el.riding.code== 316 & coucou$election.date== "1882-12-07"),]
> coucou <- coucou[!(coucou$id2== 2825 & coucou$el.riding.code== 313 & coucou$election.date== "1876-12-28"),]
> coucou <- coucou[!(coucou$id2== 2826 & coucou$el.riding.code== 171 & coucou$election.date== "1903-02-24"),]
> coucou <- coucou[!(coucou$id2== 2829 & coucou$el.riding.code== 3 & coucou$election.date== "1874-10-28"),]
> coucou <- coucou[!(coucou$id2== 2833 & coucou$el.riding.code== 550 & coucou$election.date== "1923-09-06"),]
> coucou <- coucou[!(coucou$id2== 2840 & coucou$el.riding.code== 513 & coucou$election.date== "1880-08-28"),]
> coucou <- coucou[!(coucou$id2== 2844 & coucou$el.riding.code== 500 & coucou$election.date== "1874-12-12"),]
> coucou <- coucou[!(coucou$id2== 2858 & coucou$el.riding.code== 775 & coucou$election.date== "1892-01-26"),]
> coucou <- coucou[!(coucou$id2== 2869 & coucou$el.riding.code== 709 & coucou$election.date== "1906-04-05"),]
> coucou <- coucou[!(coucou$id2== 2877 & coucou$el.riding.code== 822 & coucou$election.date== "1923-10-24"),]
> coucou <- coucou[!(coucou$id2== 2897 & coucou$el.riding.code== 559 & coucou$election.date== "1913-07-19"),]
> coucou <- coucou[!(coucou$id2== 2906 & coucou$el.riding.code== 388 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 2908 & coucou$el.riding.code== 313 & coucou$election.date== "1911-10-27"),]
> coucou <- coucou[!(coucou$id2== 2925 & coucou$el.riding.code== 117 & coucou$election.date== "1885-08-27"),]
> coucou <- coucou[!(coucou$id2== 2938 & coucou$el.riding.code== 216 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 2939 & coucou$el.riding.code== 686 & coucou$election.date== "1874-12-26"),]
> coucou <- coucou[!(coucou$id2== 2948 & coucou$el.riding.code== 277 & coucou$election.date== "1879-02-25"),]
> coucou <- coucou[!(coucou$id2== 2952 & coucou$el.riding.code== 44 & coucou$election.date== "1873-11-27"),]
> coucou <- coucou[!(coucou$id2== 2958 & coucou$el.riding.code== 147 & coucou$election.date== "1878-11-04"),]
> coucou <- coucou[!(coucou$id2== 2963 & coucou$el.riding.code== 639 & coucou$election.date== "1926-11-02"),]
> coucou <- coucou[!(coucou$id2== 2968 & coucou$el.riding.code== 185 & coucou$election.date== "1937-11-08"),]
> coucou <- coucou[!(coucou$id2== 2971 & coucou$el.riding.code== 215 & coucou$election.date== "1922-01-19"),]
> coucou <- coucou[!(coucou$id2== 2996 & coucou$el.riding.code== 837 & coucou$election.date== "1887-12-15"),]
> coucou <- coucou[!(coucou$id2== 3019 & coucou$el.riding.code== 784 & coucou$election.date== "1887-04-20"),]
> coucou <- coucou[!(coucou$id2== 3042 & coucou$el.riding.code== 588 & coucou$election.date== "1873-12-03"),]
> coucou <- coucou[!(coucou$id2== 3051 & coucou$el.riding.code== 796 & coucou$election.date== "1875-03-18"),]
> coucou <- coucou[!(coucou$id2== 3076 & coucou$el.riding.code== 266 & coucou$election.date== "1888-08-22"),]
> coucou <- coucou[!(coucou$id2== 3080 & coucou$el.riding.code== 737 & coucou$election.date== "1916-12-14"),]
> coucou <- coucou[!(coucou$id2== 3122 & coucou$el.riding.code== 847 & coucou$election.date== "1892-12-21"),]
> coucou <- coucou[!(coucou$id2== 3123 & coucou$el.riding.code== 130 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 3129 & coucou$el.riding.code== 723 & coucou$election.date== "1911-10-27"),]
> coucou <- coucou[!(coucou$id2== 3130 & coucou$el.riding.code== 326 & coucou$election.date== "1888-05-02"),]
> coucou <- coucou[!(coucou$id2== 3137 & coucou$el.riding.code== 581 & coucou$election.date== "1877-11-28"),]
> coucou <- coucou[!(coucou$id2== 3137 & coucou$el.riding.code== 663 & coucou$election.date== "1896-06-23"),]
> coucou <- coucou[!(coucou$id2== 3137 & coucou$el.riding.code== 581 & coucou$election.date== "1896-07-30"),]
> coucou <- coucou[!(coucou$id2== 3137 & coucou$el.riding.code== 831 & coucou$election.date== "1904-11-03"),]
> coucou <- coucou[!(coucou$id2== 3137 & coucou$el.riding.code== 518 & coucou$election.date== "1908-10-26"),]
> coucou <- coucou[!(coucou$id2== 3137 & coucou$el.riding.code== 690 & coucou$election.date== "1911-09-21"),]
```

```
> coucou <- coucou[!(coucou$id2== 3164 & coucou$el.riding.code== 544 & coucou$election.date== "1875-07-07"),]
> coucou <- coucou[!(coucou$id2== 3181 & coucou$el.riding.code== 807 & coucou$election.date== "1896-07-30"),]
> coucou <- coucou[!(coucou$id2== 3206 & coucou$el.riding.code== 733 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 3219 & coucou$el.riding.code== 685 & coucou$election.date== "1897-02-04"),]
> coucou <- coucou[!(coucou$id2== 3254 & coucou$el.riding.code== 317 & coucou$election.date== "1981-08-17"),]
> coucou <- coucou[!(coucou$id2== 3264 & coucou$el.riding.code== 766 & coucou$election.date== "1893-04-12"),]
> coucou <- coucou[!(coucou$id2== 3306 & coucou$el.riding.code== 588 & coucou$election.date== "1878-11-09"),]
> coucou <- coucou[!(coucou$id2== 3336 & coucou$el.riding.code== 635 & coucou$election.date== "1900-07-04"),]
> coucou <- coucou[!(coucou$id2== 3350 & coucou$el.riding.code== 164 & coucou$election.date== "1888-12-26"),]
> coucou <- coucou[!(coucou$id2== 3350 & coucou$el.riding.code== 164 & coucou$election.date== "1892-01-30"),]
> coucou <- coucou[!(coucou$id2== 3350 & coucou$el.riding.code== 164 & coucou$election.date== "1895-01-15"),]
> coucou <- coucou[!(coucou$id2== 3352 & coucou$el.riding.code== 737 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 3366 & coucou$el.riding.code== 326 & coucou$election.date== "1884-01-29"),]
> coucou <- coucou[!(coucou$id2== 3451 & coucou$el.riding.code== 582 & coucou$election.date== "1930-08-25"),]
> coucou <- coucou[!(coucou$id2== 3472 & coucou$el.riding.code== 601 & coucou$election.date== "1923-09-06"),]
>
> length(coucou$i)
[1] 10813
>
> #11066 cases
>
> #create DATA NO. 1
> write.csv(coucou,file = "~/Dropbox/Canada-Manuscript/Analysis/data1-gov.csv")
>
> ################################################
> #Replication Table 5.3 for gov sponsored motions#
> ################################################
>
> data1 <- read.csv("~/Dropbox/Canada-Manuscript/Analysis/data1-gov.csv",header=TRUE)
>
> #Select Conservatives + Liberals
>
> data1 <- subset(data1,data1$conservative==1 | data1$liberal==1)
>
> #drop turnout < .10
> data1 <- subset(data1,data1$turnout>.10)
>
> #drop total vote <10
> #Note that 31st Parliament is dropped
> data1 <- subset(data1,data1$total.vote>10)
>
> #drop total votes = 0 for non-liberal + non-conservative parties
> data1 <- subset(data1,data1$el.total.vote.mean>0)
>
> #select periods, Liberal + Conservative separately
>
> lib1 <- subset(data1,data1$liberal==1)
> cons1 <- subset(data1,data1$cons==1)
>
> lib.p1 <- subset(lib1,lib1$parliament<16)
> cons.p1 <- subset(cons1,cons1$parliament<16)
> lib.p2 <- subset(lib1,lib1$parliament>15)
> cons.p2 <- subset(cons1,cons1$parliament>15)
>
> #Models (continuous)
>
> m1 <- loyalty ~ government + cabinet + minority + no.term + turnout + el.effective + el.total.vote.mean +
maritime + quebec + west + parliament + parliament.squared + cohort + cohort.squared
>
> ######################################
> #Appendix 5.B.1 Conservatives 1st-40th#
> ######################################
>
> model5.3.1 <- lm(m1,data=cons1)
> summary(model5.3.1,2)

Call:
lm(formula = m1, data = cons1)

Residuals:
     Min       1Q   Median       3Q      Max
```

```
-0.90431 -0.00974  0.00879  0.02541  0.10862

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)        8.371e-01  9.660e-03  86.656  < 2e-16 ***
government         3.068e-02  2.879e-03  10.658  < 2e-16 ***
cabinet            4.479e-03  3.687e-03   1.215 0.224499
minority          -1.087e-03  3.634e-03  -0.299 0.764813
no.term           -5.179e-03  2.923e-03  -1.772 0.076530 .
turnout            3.771e-02  6.979e-03   5.404 6.97e-08 ***
el.effective       8.307e-03  2.332e-03   3.563 0.000372 ***
el.total.vote.mean -2.377e-07  1.098e-07  -2.165 0.030463 *
maritime           1.109e-03  3.660e-03   0.303 0.761933
quebec            -1.826e-02  3.599e-03  -5.073 4.12e-07 ***
west              -2.783e-03  3.095e-03  -0.899 0.368602
parliament         1.220e-02  2.930e-03   4.165 3.19e-05 ***
parliament.squared -1.379e-04  3.263e-05  -4.226 2.45e-05 ***
cohort            -4.150e-03  2.885e-03  -1.438 0.150432
cohort.squared    -4.579e-06  3.268e-05  -0.140 0.888585
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.06977 on 3450 degrees of freedom
  (9 observations deleted due to missingness)
Multiple R-squared:  0.1724,
  Adjusted R-squared:  0.1691
F-statistic: 51.34 on 14 and 3450 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                  (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government        -0.35
cabinet            0.11       -0.35
minority           0.08        0.23       0.03
no.term           -0.36        0.08      -0.07    0.00
turnout           -0.61        0.00      -0.07   -0.26     0.02
el.effective      -0.52        0.10       0.07   -0.06     0.04    0.03
el.total.vote.mean  0.16       -0.05      -0.07    0.07     0.03   -0.01   -0.27
maritime          -0.08        0.03      -0.05    0.04     0.05    0.03   -0.13         0.06
quebec            -0.27       -0.06      -0.07    0.05     0.06    0.12    0.10         0.01
west              -0.04        0.01       0.01    0.00    -0.01   -0.03   -0.06         0.12
parliament         0.14        0.01       0.01    0.02    -0.84    0.02   -0.03        -0.04
parliament.squared  0.27       -0.08       0.03   -0.10    -0.11   -0.04    0.04        -0.05
cohort            -0.23        0.03      -0.01    0.00     0.85    0.03    0.03         0.00
cohort.squared    -0.11        0.01      -0.05    0.03     0.12   -0.05   -0.05         0.04
                  maritime quebec west  parliament parliament.squared cohort
government
cabinet
minority
no.term
turnout
el.effective
el.total.vote.mean
maritime
quebec             0.26
west               0.34     0.29
parliament        -0.02    -0.03   0.05
parliament.squared -0.07    -0.01  -0.11 -0.39
cohort             0.03     0.05  -0.06 -0.99       0.34
cohort.squared     0.06    -0.04   0.11  0.36      -0.94             -0.36

> nobs(model5.3.1)
[1] 3465
> round(coeftest(model5.3.1, vcov = vcovHAC(model5.3.1)),2)

t test of coefficients:

                  Estimate Std. Error t value Pr(>|t|)
(Intercept)           0.84       0.01   70.35   <2e-16 ***
government            0.03       0.00    7.54   <2e-16 ***
cabinet               0.00       0.00    1.61     0.11
minority              0.00       0.00   -0.43     0.67
```

```
no.term               -0.01       0.00   -2.37     0.02 *
turnout                0.04       0.01    5.05   <2e-16 ***
el.effective           0.01       0.00    3.78   <2e-16 ***
el.total.vote.mean     0.00       0.00   -3.41   <2e-16 ***
maritime               0.00       0.00    0.31     0.76
quebec                -0.02       0.01   -2.82   <2e-16 ***
west                   0.00       0.00   -1.18     0.24
parliament             0.01       0.00    4.80   <2e-16 ***
parliament.squared     0.00       0.00   -3.39   <2e-16 ***
cohort                 0.00       0.00   -1.72     0.09 .
cohort.squared         0.00       0.00   -0.10     0.92
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
>
> model5.3.1 <- glm(model5.3.1,dat=cons1,family=quasibinomial(logit))
> round(coeftest(model5.3.1, vcov = vcovHAC(model5.3.1)),2)

z test of coefficients:

                   Estimate Std. Error z value Pr(>|z|)
(Intercept)            0.18       0.31    0.58     0.56
government             1.04       0.12    8.33   <2e-16 ***
cabinet                0.66       0.23    2.92   <2e-16 ***
minority              -0.20       0.13   -1.52     0.13
no.term               -0.17       0.11   -1.51     0.13
turnout                1.15       0.24    4.84   <2e-16 ***
el.effective           0.18       0.08    2.30     0.02 *
el.total.vote.mean     0.00       0.00   -1.01     0.31
maritime              -0.03       0.14   -0.20     0.84
quebec                -0.41       0.18   -2.26     0.02 *
west                  -0.10       0.13   -0.78     0.44
parliament             0.32       0.11    3.01   <2e-16 ***
parliament.squared     0.00       0.00   -2.37     0.02 *
cohort                -0.12       0.10   -1.19     0.23
cohort.squared         0.00       0.00    0.23     0.82
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> ######################################
> #Appendix 5.B.2 Conservatives 1st-15th#
> ######################################
>
> model5.3.2 <- lm(m1,data=cons.p1)
> summary(model5.3.2,2)

Call:
lm(formula = m1, data = cons.p1)

Residuals:
     Min       1Q   Median       3Q      Max
-0.89090 -0.01511  0.02112  0.04786  0.15133

Coefficients:
                     Estimate Std. Error t value Pr(>|t|)
(Intercept)         7.362e-01  2.183e-02  33.725  < 2e-16 ***
government          6.799e-02  7.446e-03   9.132  < 2e-16 ***
cabinet             3.482e-02  1.077e-02   3.232 0.001261 **
minority            8.809e-02  2.052e-02   4.293 1.90e-05 ***
no.term            -1.376e-02  7.800e-03  -1.764 0.077912 .
turnout             4.994e-02  1.605e-02   3.111 0.001908 **
el.effective        8.648e-03  5.405e-03   1.600 0.109815
el.total.vote.mean  5.328e-07  8.360e-07   0.637 0.524050
maritime           -8.175e-03  8.939e-03  -0.915 0.360601
quebec             -2.698e-02  7.952e-03  -3.393 0.000714 ***
west                5.618e-03  9.854e-03   0.570 0.568729
parliament          3.953e-02  8.164e-03   4.843 1.44e-06 ***
parliament.squared -1.755e-03  3.504e-04  -5.007 6.33e-07 ***
```

```
cohort             -3.034e-03  7.673e-03  -0.395 0.692624
cohort.squared     -3.931e-04  3.331e-04  -1.180 0.238150
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.1046 on 1229 degrees of freedom
  (9 observations deleted due to missingness)
Multiple R-squared:  0.1619,
  Adjusted R-squared:  0.1524
F-statistic: 16.96 on 14 and 1229 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                  (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government         -0.40
cabinet             0.08       -0.18
minority           -0.19        0.31       0.04
no.term            -0.36        0.09      -0.11   -0.01
turnout            -0.53       -0.01      -0.12    0.05    -0.02
el.effective       -0.34        0.00       0.08   -0.14    -0.02   -0.03
el.total.vote.mean  0.08       -0.03      -0.06   -0.07    -0.01    0.06   -0.47
maritime           -0.05       -0.02      -0.13    0.03     0.12    0.02   -0.16        -0.10
quebec             -0.23       -0.03      -0.04    0.00    -0.03    0.02    0.12         0.02
west               -0.05       -0.03      -0.02    0.06     0.02   -0.06    0.06        -0.01
parliament          0.06        0.04       0.04    0.10    -0.78    0.02   -0.05         0.03
parliament.squared  0.29       -0.13      -0.01   -0.17    -0.06    0.02    0.16        -0.11
cohort             -0.30        0.07       0.00    0.09     0.80    0.00   -0.06         0.02
cohort.squared     -0.02       -0.01      -0.08   -0.16     0.12   -0.04    0.05        -0.08
                  maritime quebec west  parliament parliament.squared cohort
government
cabinet
minority
no.term
turnout
el.effective
el.total.vote.mean
maritime
quebec             0.25
west               0.19     0.21
parliament         -0.12    0.00  -0.03
parliament.squared  0.06    0.09   0.04 -0.52
cohort              0.10    0.02   0.03 -0.88       0.27
cohort.squared     -0.01    -0.11  -0.10  0.30      -0.68              -0.43

> nobs(model5.3.2)
[1] 1244
> round(coeftest(model5.3.2, vcov = vcovHAC(model5.3.2)),2)

t test of coefficients:

                  Estimate Std. Error t value Pr(>|t|)
(Intercept)           0.74       0.02   31.66   <2e-16 ***
government            0.07       0.01    6.22   <2e-16 ***
cabinet               0.03       0.01    3.95   <2e-16 ***
minority              0.09       0.02    5.57   <2e-16 ***
no.term              -0.01       0.01   -2.02     0.04 *
turnout               0.05       0.01    3.44   <2e-16 ***
el.effective          0.01       0.00    1.82     0.07 .
el.total.vote.mean    0.00       0.00    0.78     0.43
maritime             -0.01       0.01   -0.96     0.34
quebec               -0.03       0.01   -1.87     0.06 .
west                  0.01       0.01    0.78     0.43
parliament            0.04       0.01    6.50   <2e-16 ***
parliament.squared    0.00       0.00   -4.35   <2e-16 ***
cohort                0.00       0.01   -0.58     0.56
cohort.squared        0.00       0.00   -0.89     0.37
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
>
```

```
> model5.3.2 <- glm(model5.3.2,dat=cons.p1,family=quasibinomial(logit))
> round(coeftest(model5.3.2, vcov = vcovHAC(model5.3.2)),2)

z test of coefficients:

                  Estimate Std. Error z value Pr(>|z|)
(Intercept)          -0.29       0.38   -0.75     0.45
government            1.06       0.15    7.09   <2e-16 ***
cabinet               0.96       0.28    3.50   <2e-16 ***
minority              1.34       0.36    3.70   <2e-16 ***
no.term              -0.27       0.17   -1.60     0.11
turnout               0.94       0.26    3.64   <2e-16 ***
el.effective          0.17       0.12    1.42     0.15
el.total.vote.mean    0.00       0.00    1.09     0.28
maritime             -0.10       0.18   -0.53     0.59
quebec               -0.38       0.23   -1.68     0.09 .
west                  0.23       0.18    1.27     0.20
parliament            0.66       0.14    4.61   <2e-16 ***
parliament.squared   -0.03       0.01   -3.22   <2e-16 ***
cohort               -0.10       0.15   -0.71     0.48
cohort.squared       -0.01       0.01   -0.61     0.54
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> ########################################
> #Appendix 5.B.2 Conservatives 16th-40th#
> ########################################
>
> model5.3.3 <- lm(m1,data=cons.p2)
> summary(model5.3.3,2)

Call:
lm(formula = m1, data = cons.p2)

Residuals:
     Min       1Q   Median       3Q      Max
-0.75987 -0.00165  0.00360  0.01114  0.03823

Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)         1.016e+00  1.394e-02  72.870  < 2e-16 ***
government          1.034e-02  1.649e-03   6.273 4.25e-10 ***
cabinet            -3.804e-04  1.932e-03  -0.197  0.84393
minority           -8.995e-03  1.814e-03  -4.960 7.60e-07 ***
no.term            -3.761e-04  1.592e-03  -0.236  0.81332
turnout             2.197e-02  4.241e-03   5.180 2.42e-07 ***
el.effective       -4.545e-03  1.555e-03  -2.923  0.00351 **
el.total.vote.mean -5.439e-08  5.088e-08  -1.069  0.28512
maritime           -1.153e-03  2.096e-03  -0.550  0.58226
quebec             -4.637e-03  2.278e-03  -2.036  0.04187 *
west               -2.405e-03  1.613e-03  -1.491  0.13614
parliament         -4.564e-03  2.312e-03  -1.974  0.04852 *
parliament.squared  8.433e-05  3.149e-05   2.678  0.00746 **
cohort              2.285e-03  1.991e-03   1.148  0.25117
cohort.squared     -4.062e-05  2.698e-05  -1.505  0.13239
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.03075 on 2206 degrees of freedom
Multiple R-squared:  0.07729,
  Adjusted R-squared:  0.07144
F-statistic:  13.2 on 14 and 2206 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                  (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government         -0.33
cabinet             0.05       -0.38
minority           -0.16        0.26       0.03
no.term            -0.05        0.03      -0.07   -0.05
turnout            -0.39        0.03      -0.07   -0.31     0.05
```

```
el.effective       -0.21        0.14       0.06   -0.05     0.08    0.01
el.total.vote.mean  0.16       -0.10      -0.07    0.05     0.03   -0.04   -0.28
maritime           -0.01        0.06      -0.02    0.03     0.02    0.04   -0.05         0.08
quebec              0.00       -0.14      -0.08   -0.03     0.15    0.18    0.06         0.05
west                0.04        0.01       0.01   -0.02    -0.01    0.01   -0.11         0.16
parliament         -0.45        0.14       0.01    0.12    -0.65    0.10   -0.08        -0.07
parliament.squared  0.62       -0.19       0.01   -0.15     0.02   -0.15    0.06         0.03
cohort              0.10       -0.04      -0.01   -0.01     0.69   -0.02    0.08         0.01
cohort.squared     -0.18        0.06      -0.01    0.00     0.04    0.04   -0.07         0.02
                   maritime quebec west  parliament parliament.squared cohort
government
cabinet
minority
no.term
turnout
el.effective
el.total.vote.mean
maritime
quebec              0.26
west                0.41     0.34
parliament          0.00    -0.11   0.05
parliament.squared -0.04     0.05  -0.08 -0.76
cohort             -0.03     0.07  -0.10 -0.92       0.61
cohort.squared      0.08     0.01   0.13  0.61      -0.86              -0.67

> nobs(model5.3.3)
[1] 2221
> round(coeftest(model5.3.3, vcov = vcovHAC(model5.3.3)),2)

t test of coefficients:

                   Estimate Std. Error t value Pr(>|t|)
(Intercept)            1.02       0.01   82.22   <2e-16 ***
government             0.01       0.00    6.51   <2e-16 ***
cabinet                0.00       0.00   -0.24     0.81
minority              -0.01       0.00   -3.98   <2e-16 ***
no.term                0.00       0.00   -0.32     0.75
turnout                0.02       0.01    4.38   <2e-16 ***
el.effective           0.00       0.00   -3.55   <2e-16 ***
el.total.vote.mean     0.00       0.00   -1.02     0.31
maritime               0.00       0.00   -0.60     0.55
quebec                 0.00       0.00   -1.91     0.06 .
west                   0.00       0.00   -1.51     0.13
parliament             0.00       0.00   -2.50     0.01 **
parliament.squared     0.00       0.00    3.28   <2e-16 ***
cohort                 0.00       0.00    1.40     0.16
cohort.squared         0.00       0.00   -1.76     0.08 .
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
>
> model5.3.3 <- glm(model5.3.3,dat=cons.p2,family=quasibinomial(logit))
> round(coeftest(model5.3.3, vcov = vcovHAC(model5.3.3)),2)

z test of coefficients:

                   Estimate Std. Error z value Pr(>|z|)
(Intercept)            7.37       1.35    5.46   <2e-16 ***
government             1.51       0.37    4.06   <2e-16 ***
cabinet               -0.04       0.49   -0.08     0.94
minority              -0.43       0.13   -3.31   <2e-16 ***
no.term               -0.01       0.12   -0.08     0.93
turnout                2.04       0.43    4.78   <2e-16 ***
el.effective          -0.31       0.12   -2.61     0.01 **
el.total.vote.mean     0.00       0.00   -1.60     0.11
maritime              -0.11       0.20   -0.56     0.58
quebec                -0.51       0.29   -1.77     0.08 .
west                  -0.20       0.16   -1.22     0.22
parliament            -0.56       0.23   -2.48     0.01 **
```

```
parliament.squared     0.01       0.00    3.06   <2e-16 ***
cohort                 0.31       0.20    1.57     0.12
cohort.squared        -0.01       0.00   -1.92     0.05 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

> 
> ################################
> #Appendix 5.B.4 Liberal 1st-40th#
> ################################
> 
> model5.3.4 <- lm(m1,data=lib1)
> summary(model5.3.4,2)

Call:
lm(formula = m1, data = lib1)

Residuals:
     Min       1Q   Median       3Q      Max 
-0.88735 -0.00797  0.00753  0.03061  0.12955 

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)    
(Intercept)         8.156e-01  1.034e-02  78.887  < 2e-16 ***
government          1.273e-02  3.686e-03   3.453 0.000560 ***
cabinet             1.835e-03  3.667e-03   0.500 0.616898    
minority           -2.039e-03  3.675e-03  -0.555 0.579000    
no.term             3.684e-03  2.970e-03   1.240 0.214923    
turnout             3.276e-02  8.347e-03   3.925 8.83e-05 ***
el.effective        6.671e-03  2.826e-03   2.361 0.018299 *  
el.total.vote.mean -3.385e-07  1.305e-07  -2.595 0.009506 ** 
maritime           -3.464e-03  4.146e-03  -0.835 0.403497    
quebec             -1.148e-02  3.396e-03  -3.381 0.000729 ***
west               -2.436e-02  4.682e-03  -5.203 2.06e-07 ***
parliament          1.635e-02  3.177e-03   5.147 2.78e-07 ***
parliament.squared -3.428e-04  3.558e-05  -9.635  < 2e-16 ***
cohort             -6.233e-03  3.113e-03  -2.002 0.045364 *  
cohort.squared      1.693e-04  3.604e-05   4.697 2.74e-06 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.08313 on 3716 degrees of freedom
  (1 observation deleted due to missingness)
Multiple R-squared:  0.1569,
  Adjusted R-squared:  0.1537 
F-statistic:  49.4 on 14 and 3716 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                  (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government          0.06                                                                                  
cabinet             0.09       -0.32                                                                      
minority            0.16       -0.02       0.17                                                           
no.term            -0.34        0.06      -0.01    0.00                                                  
turnout            -0.59       -0.25      -0.12   -0.20    -0.03                                         
el.effective       -0.55       -0.05       0.10   -0.08     0.10    0.04                                 
el.total.vote.mean  0.15        0.02      -0.10    0.01     0.05    0.00   -0.31                         
maritime           -0.14        0.04      -0.04   -0.04     0.04    0.01   -0.03         0.14            
quebec             -0.22       -0.01      -0.02   -0.07    -0.02    0.07    0.16         0.06            
west                0.01        0.02      -0.07   -0.02     0.05    0.00   -0.17         0.18            
parliament          0.13       -0.06      -0.05    0.01    -0.83    0.04   -0.10        -0.07            
parliament.squared  0.23        0.10       0.03   -0.10     0.01   -0.03    0.06        -0.01            
cohort             -0.21       -0.01       0.06   -0.01     0.83   -0.01    0.10         0.03            
cohort.squared     -0.08        0.04      -0.07    0.09     0.00   -0.05   -0.06         0.01            
                  maritime quebec west  parliament parliament.squared cohort
government                                                                   
cabinet                                                                      
minority                                                                     
no.term                                                                      
turnout                                                                      
el.effective                                                                 
el.total.vote.mean                                                           
```

```
maritime
quebec               0.38
west                 0.29     0.33
parliament          -0.04    -0.03  -0.03
parliament.squared   0.01     0.08   0.01 -0.51
cohort               0.03    -0.01   0.01 -0.98       0.46
cohort.squared       0.00    -0.01   0.04  0.48      -0.93              -0.49

> nobs(model5.3.4)
[1] 3731
> round(coeftest(model5.3.4, vcov = vcovHAC(model5.3.4)),2)

t test of coefficients:

                   Estimate Std. Error t value Pr(>|t|)
(Intercept)            0.82       0.02   48.61   <2e-16 ***
government             0.01       0.00    3.02   <2e-16 ***
cabinet                0.00       0.00    0.75     0.45
minority               0.00       0.00   -0.96     0.34
no.term                0.00       0.00    0.90     0.37
turnout                0.03       0.01    3.37   <2e-16 ***
el.effective           0.01       0.00    1.86     0.06 .
el.total.vote.mean     0.00       0.00   -3.97   <2e-16 ***
maritime               0.00       0.00   -0.82     0.41
quebec                -0.01       0.00   -3.55   <2e-16 ***
west                  -0.02       0.01   -3.03   <2e-16 ***
parliament             0.02       0.00    3.55   <2e-16 ***
parliament.squared     0.00       0.00   -8.43   <2e-16 ***
cohort                -0.01       0.00   -1.44     0.15
cohort.squared         0.00       0.00    4.78   <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
>
> model5.3.4 <- glm(model5.3.4,dat=lib1,family=quasibinomial(logit))
> round(coeftest(model5.3.4, vcov = vcovHAC(model5.3.4)),2)

z test of coefficients:

                   Estimate Std. Error z value Pr(>|z|)
(Intercept)            0.10       0.32    0.32     0.75
government             0.38       0.11    3.34   <2e-16 ***
cabinet                0.64       0.16    3.93   <2e-16 ***
minority              -0.23       0.13   -1.81     0.07 .
no.term                0.10       0.14    0.71     0.48
turnout                1.10       0.26    4.22   <2e-16 ***
el.effective           0.18       0.11    1.65     0.10 .
el.total.vote.mean     0.00       0.00   -2.55     0.01 **
maritime              -0.16       0.14   -1.12     0.26
quebec                -0.49       0.11   -4.27   <2e-16 ***
west                  -1.01       0.22   -4.55   <2e-16 ***
parliament             0.29       0.15    2.01     0.04 *
parliament.squared    -0.01       0.00   -8.14   <2e-16 ***
cohort                -0.06       0.14   -0.41     0.69
cohort.squared         0.00       0.00    3.32   <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> ################################
> #Appendix 5.B.5 Liberal 1st-15th#
> ################################
>
> model5.3.5 <- lm(m1,data=lib.p1)
> summary(model5.3.5,2)

Call:
lm(formula = m1, data = lib.p1)
```

```
Residuals:
     Min       1Q   Median       3Q      Max
-0.84862 -0.01871  0.01454  0.05779  0.19069

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)         6.876e-01  2.465e-02  27.894  < 2e-16 ***
government          3.433e-02  8.051e-03   4.264 2.17e-05 ***
cabinet             1.352e-02  1.361e-02   0.994 0.320499
minority           -2.679e-03  1.954e-02  -0.137 0.890951
no.term            -1.759e-03  7.943e-03  -0.221 0.824787
turnout             6.975e-02  1.881e-02   3.708 0.000219 ***
el.effective       -1.386e-04  7.174e-03  -0.019 0.984589
el.total.vote.mean  4.082e-07  8.649e-07   0.472 0.637060
maritime           -2.233e-02  9.651e-03  -2.313 0.020875 *
quebec             -2.338e-02  8.551e-03  -2.734 0.006354 **
west               -1.174e-01  1.372e-02  -8.562  < 2e-16 ***
parliament          5.763e-02  9.173e-03   6.283 4.66e-10 ***
parliament.squared -2.579e-03  3.925e-04  -6.572 7.43e-11 ***
cohort             -1.264e-02  8.580e-03  -1.473 0.140903
cohort.squared      5.734e-04  3.453e-04   1.661 0.097070 .
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.1159 on 1178 degrees of freedom
  (1 observation deleted due to missingness)
Multiple R-squared:  0.2691,
  Adjusted R-squared:  0.2604
F-statistic: 30.97 on 14 and 1178 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                   (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government          0.12
cabinet             0.02       -0.23
minority           -0.17       -0.35      -0.02
no.term            -0.34        0.03      -0.03    0.02
turnout            -0.59       -0.16      -0.08    0.03    -0.08
el.effective       -0.45        0.00       0.11   -0.07     0.10    0.05
el.total.vote.mean  0.12        0.03      -0.10   -0.22     0.03    0.02   -0.50
maritime           -0.11       -0.03      -0.03    0.07     0.03    0.03   -0.14         0.01
quebec             -0.23       -0.04       0.01    0.02    -0.03    0.06    0.14         0.04
west               -0.11       -0.07      -0.05    0.10     0.02    0.07   -0.03         0.05
parliament          0.03       -0.14      -0.01    0.20    -0.77    0.08   -0.17         0.01
parliament.squared  0.31        0.25      -0.02   -0.44     0.01   -0.02    0.18        -0.12
cohort             -0.27       -0.08       0.02    0.14     0.81   -0.02    0.03         0.04
cohort.squared     -0.01        0.08       0.04   -0.17    -0.01   -0.06    0.09        -0.04
                   maritime quebec west  parliament parliament.squared cohort
government
cabinet
minority
no.term
turnout
el.effective
el.total.vote.mean
maritime
quebec              0.43
west                0.29     0.35
parliament          0.03     0.04   0.00
parliament.squared -0.10    -0.09  -0.03 -0.60
cohort              0.01    -0.05   0.01 -0.84       0.25
cohort.squared      0.03     0.05  -0.04  0.35      -0.51              -0.53

> nobs(model5.3.5)
[1] 1193
> round(coeftest(model5.3.5, vcov = vcovHAC(model5.3.5)),2)

t test of coefficients:

                   Estimate Std. Error t value Pr(>|t|)
(Intercept)            0.69       0.03   21.62   <2e-16 ***
government             0.03       0.01    3.52   <2e-16 ***
```

```
cabinet                0.01       0.01    1.58     0.11
minority               0.00       0.02   -0.14     0.89
no.term                0.00       0.01   -0.30     0.77
turnout                0.07       0.02    3.25   <2e-16 ***
el.effective           0.00       0.01   -0.02     0.99
el.total.vote.mean     0.00       0.00    0.59     0.56
maritime              -0.02       0.01   -2.13     0.03 *
quebec                -0.02       0.01   -2.62     0.01 **
west                  -0.12       0.03   -4.41   <2e-16 ***
parliament             0.06       0.01    6.55   <2e-16 ***
parliament.squared     0.00       0.00   -5.85   <2e-16 ***
cohort                -0.01       0.01   -1.63     0.10 .
cohort.squared         0.00       0.00    1.80     0.07 .
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
>
> model5.3.5 <- glm(model5.3.5,dat=lib.p1,family=quasibinomial(logit))
> round(coeftest(model5.3.5, vcov = vcovHAC(model5.3.5)),2)

z test of coefficients:

                  Estimate Std. Error z value Pr(>|z|)
(Intercept)           0.05       0.42    0.11     0.91
government            0.77       0.17    4.46   <2e-16 ***
cabinet               0.97       0.39    2.47     0.01 **
minority             -0.68       0.49   -1.38     0.17
no.term              -0.08       0.19   -0.41     0.68
turnout               1.15       0.33    3.47   <2e-16 ***
el.effective          0.02       0.13    0.13     0.90
el.total.vote.mean    0.00       0.00    0.34     0.73
maritime             -0.34       0.19   -1.81     0.07 .
quebec               -0.46       0.16   -2.81     0.01 **
west                 -1.92       0.25   -7.79   <2e-16 ***
parliament            0.55       0.22    2.54     0.01 **
parliament.squared   -0.01       0.01   -1.76     0.08 .
cohort               -0.15       0.23   -0.63     0.53
cohort.squared        0.00       0.01   -0.02     0.98
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> ##################################
> #Appendix 5.B.6 Liberal 16th-40th#
> ##################################
>
> model5.3.6 <- lm(m1,data=lib.p2)
> summary(model5.3.6,2)

Call:
lm(formula = m1, data = lib.p2)

Residuals:
     Min       1Q   Median       3Q      Max
-0.89548 -0.00188  0.00765  0.01714  0.06281

Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)         8.391e-01  2.122e-02  39.549  < 2e-16 ***
government         -8.914e-03  3.242e-03  -2.750 0.006006 **
cabinet             7.946e-03  2.550e-03   3.116 0.001851 **
minority           -1.898e-03  2.651e-03  -0.716 0.473991
no.term             5.331e-03  2.187e-03   2.438 0.014843 *
turnout             1.891e-02  6.878e-03   2.749 0.006012 **
el.effective        3.098e-03  2.344e-03   1.322 0.186446
el.total.vote.mean  1.875e-08  8.523e-08   0.220 0.825916
maritime            4.054e-03  3.314e-03   1.223 0.221378
quebec             -9.687e-03  2.571e-03  -3.768 0.000168 ***
west                3.277e-03  3.425e-03   0.957 0.338754
```

```
parliament          1.708e-03  3.301e-03   0.517 0.605047
parliament.squared -1.236e-04  4.652e-05  -2.656 0.007959 **
cohort              7.754e-03  3.011e-03   2.576 0.010064 *
cohort.squared     -4.104e-05  4.141e-05  -0.991 0.321775
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.05191 on 2523 degrees of freedom
Multiple R-squared:  0.04648,
  Adjusted R-squared:  0.04119
F-statistic: 8.785 on 14 and 2523 DF,  p-value: < 2.2e-16

Correlation of Coefficients:
                  (Intercept) government cabinet minority no.term turnout el.effective el.total.vote.mean
government          0.16
cabinet             0.14       -0.32
minority           -0.12        0.03       0.16
no.term            -0.19        0.07      -0.03   -0.01
turnout            -0.28       -0.35      -0.13   -0.27     0.00
el.effective       -0.14       -0.03       0.12   -0.11     0.09    0.00
el.total.vote.mean  0.09        0.04      -0.09    0.02     0.06   -0.01   -0.29
maritime           -0.04        0.07      -0.03   -0.04     0.05   -0.02    0.08         0.16
quebec             -0.02       -0.01      -0.02   -0.09    -0.02    0.08    0.14         0.06
west               -0.12        0.02      -0.11    0.02     0.06   -0.02   -0.25         0.20
parliament         -0.38       -0.12      -0.09    0.11    -0.57    0.07   -0.08        -0.08
parliament.squared  0.58        0.15       0.09   -0.17    -0.01   -0.08    0.05         0.03
cohort             -0.06        0.01       0.05   -0.02     0.65   -0.01    0.03         0.04
cohort.squared     -0.06        0.01      -0.07    0.06    -0.03    0.00   -0.01        -0.01
                  maritime quebec west  parliament parliament.squared cohort
government
cabinet
minority
no.term
turnout
el.effective
el.total.vote.mean
maritime
quebec              0.36
west                0.25     0.31
parliament         -0.04    -0.05   0.01
parliament.squared  0.02     0.09  -0.05 -0.79
cohort              0.02     0.00   0.05 -0.89       0.59
cohort.squared      0.01    -0.02  -0.01  0.67      -0.81              -0.75

> nobs(model5.3.6)
[1] 2538
> round(coeftest(model5.3.6, vcov = vcovHAC(model5.3.6)),2)

t test of coefficients:

                  Estimate Std. Error t value Pr(>|t|)
(Intercept)           0.84       0.03   27.41   <2e-16 ***
government           -0.01       0.00   -2.29     0.02 *
cabinet               0.01       0.00    4.16   <2e-16 ***
minority              0.00       0.00   -0.99     0.32
no.term               0.01       0.00    1.15     0.25
turnout               0.02       0.01    2.78     0.01 **
el.effective          0.00       0.00    1.41     0.16
el.total.vote.mean    0.00       0.00    0.41     0.68
maritime              0.00       0.00    2.33     0.02 *
quebec               -0.01       0.00   -3.89   <2e-16 ***
west                  0.00       0.00    1.08     0.28
parliament            0.00       0.01    0.24     0.81
parliament.squared    0.00       0.00   -1.73     0.08 .
cohort                0.01       0.01    1.04     0.30
cohort.squared        0.00       0.00   -0.53     0.60
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
> #fractional logit with robust standard errors
```

```
>
> model5.3.6 <- glm(model5.3.6,dat=lib.p2,family=quasibinomial(logit))
> round(coeftest(model5.3.6, vcov = vcovHAC(model5.3.6)),2)

z test of coefficients:

                   Estimate Std. Error z value Pr(>|z|)
(Intercept)           -4.02       1.34   -3.01   <2e-16 ***
government            -0.59       0.25   -2.35     0.02 *
cabinet                0.76       0.16    4.76   <2e-16 ***
minority              -0.04       0.17   -0.23     0.82
no.term                0.25       0.15    1.65     0.10 .
turnout                1.11       0.39    2.87   <2e-16 ***
el.effective           0.17       0.16    1.10     0.27
el.total.vote.mean     0.00       0.00    0.41     0.68
maritime               0.39       0.19    2.03     0.04 *
quebec                -0.59       0.14   -4.38   <2e-16 ***
west                   0.22       0.29    0.77     0.44
parliament             0.27       0.25    1.08     0.28
parliament.squared    -0.01       0.00   -3.01   <2e-16 ***
cohort                 0.28       0.24    1.16     0.25
cohort.squared         0.00       0.00   -0.06     0.95
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

>
>
```