

PPOL 6801

# **DEMOCRATIZATION AND LINGUISTIC COMPLEXITY REPLICATION**

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# BACKGROUND

Arthur Spriling (2016)

Evaluates how speech complexity in parliament changed after the Second Reform Act (1868) which extended the right to vote to lower class British citizens

**Does political speech adapt to its audience? Are certain political officers more likely to change their way of speaking?**

# Methods

## Data

- Analyzed over 670,000 speeches from Liberal and Conservative MP's in the house of Commons from 1832 to 1915

## Preprocessing

- Split speeches into sentences using punctuation
- lengthened honorifics
- stripped whitespace
- dropped speeches that included only numerics

## Calculated Readability

- Calculated word, sentence, and syllable count for each document
- used these statistics to calculate Flesch score (FRE)

## Results

- Found that both cabinet and non-cabinet MP's increased FRE score over time
- cabinet members saw a much sharper increase after 1868

# Recalculating Readability

$$206.835 - 1.015 \left( \frac{\text{total number of words}}{\text{total number of sentences}} \right) - 84.6 \left( \frac{\text{total number of syllables}}{\text{total number of words}} \right) = \text{new FRE score per document}$$



90-100

80-89

70-79

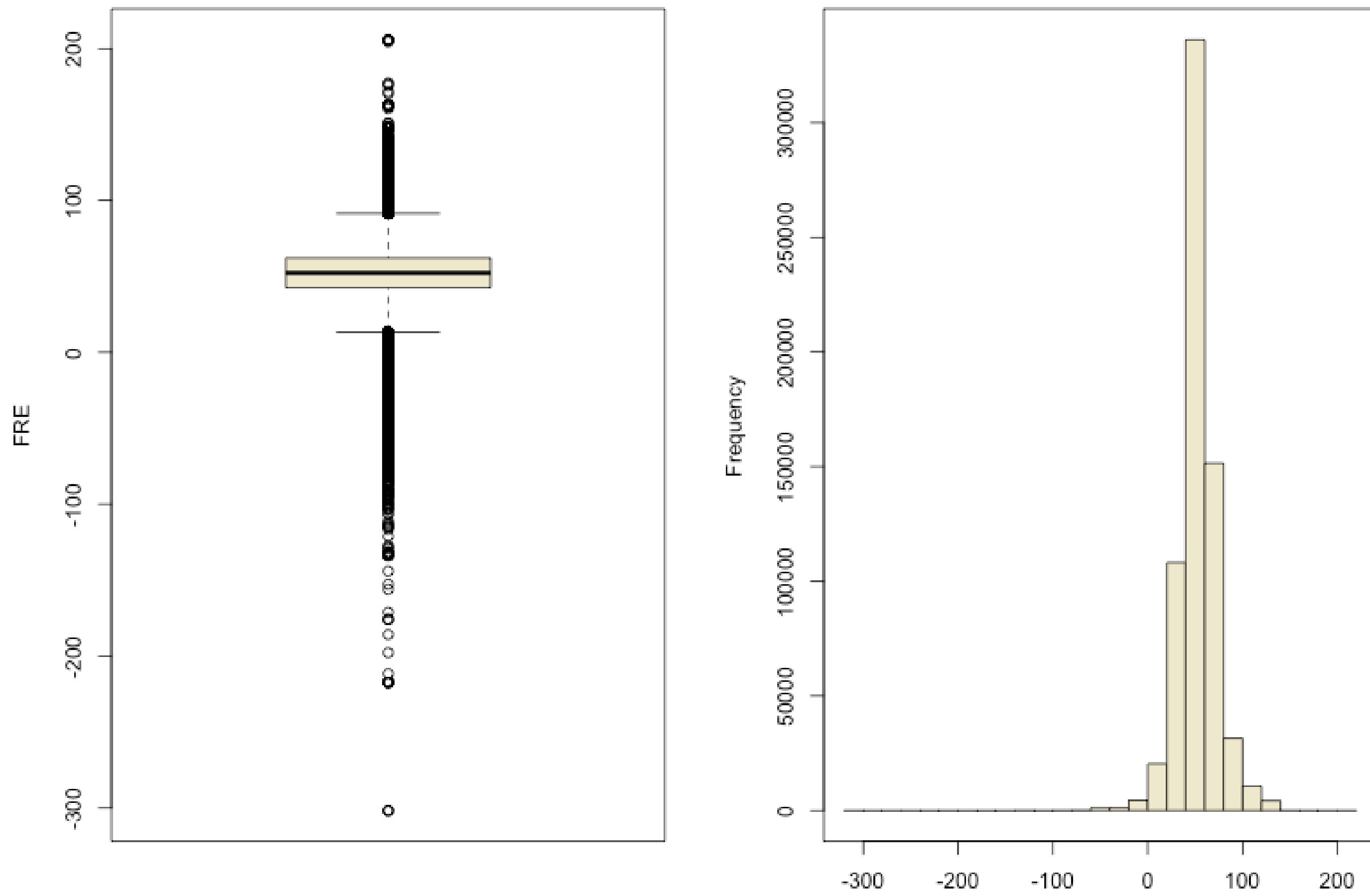
60-69

50-59

30-49

0-29

# Figure 1

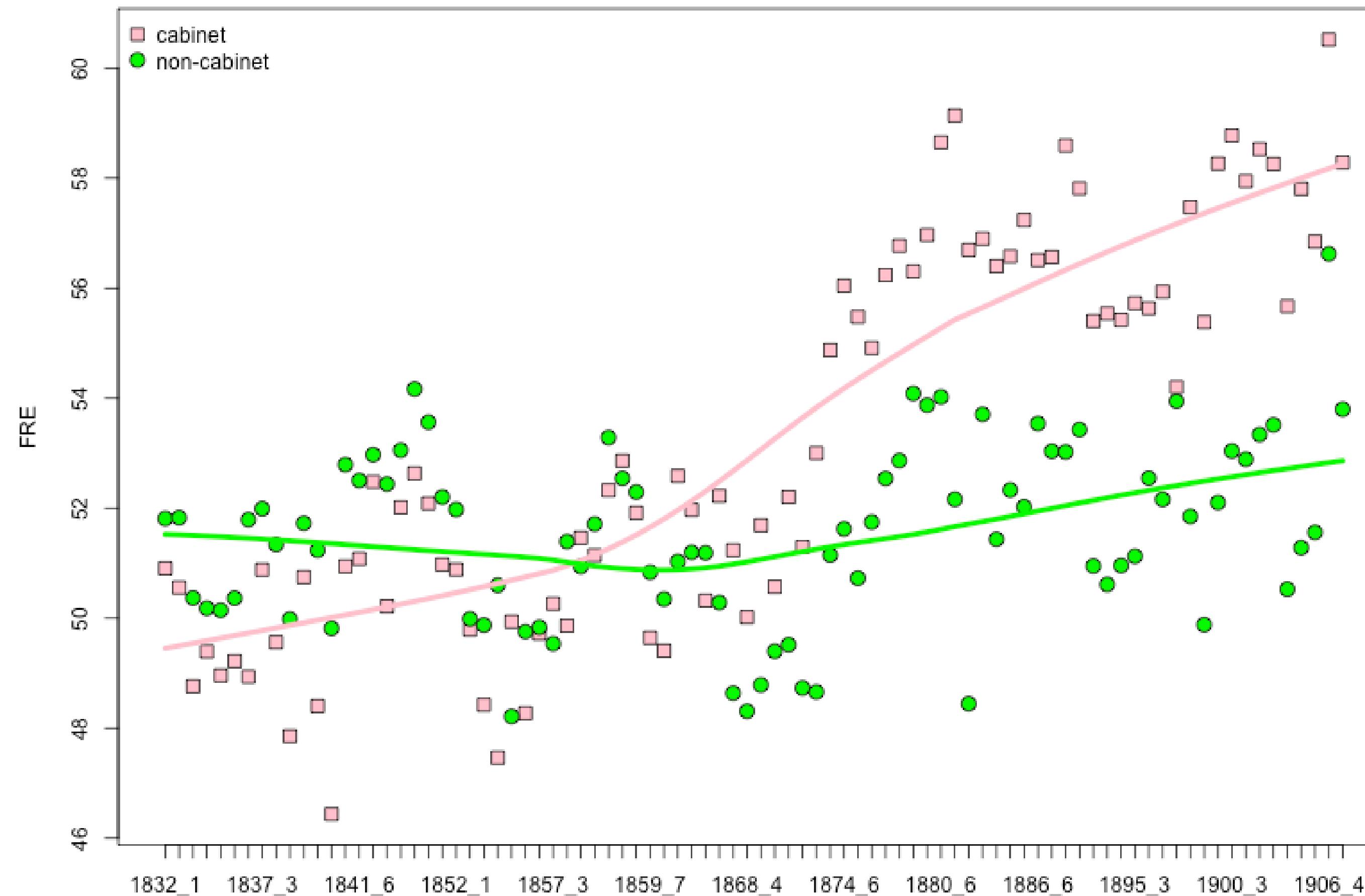


# Table 2

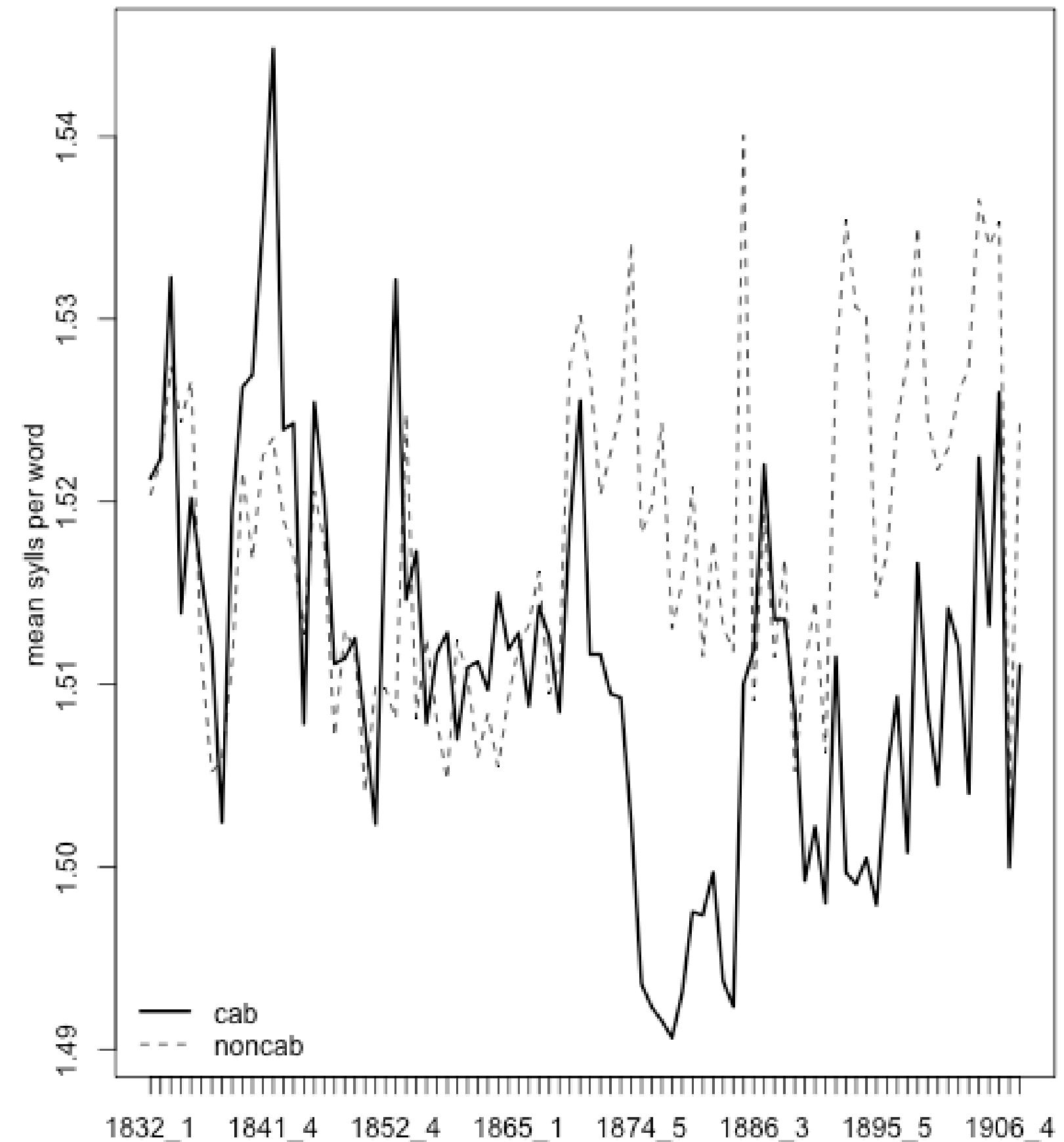
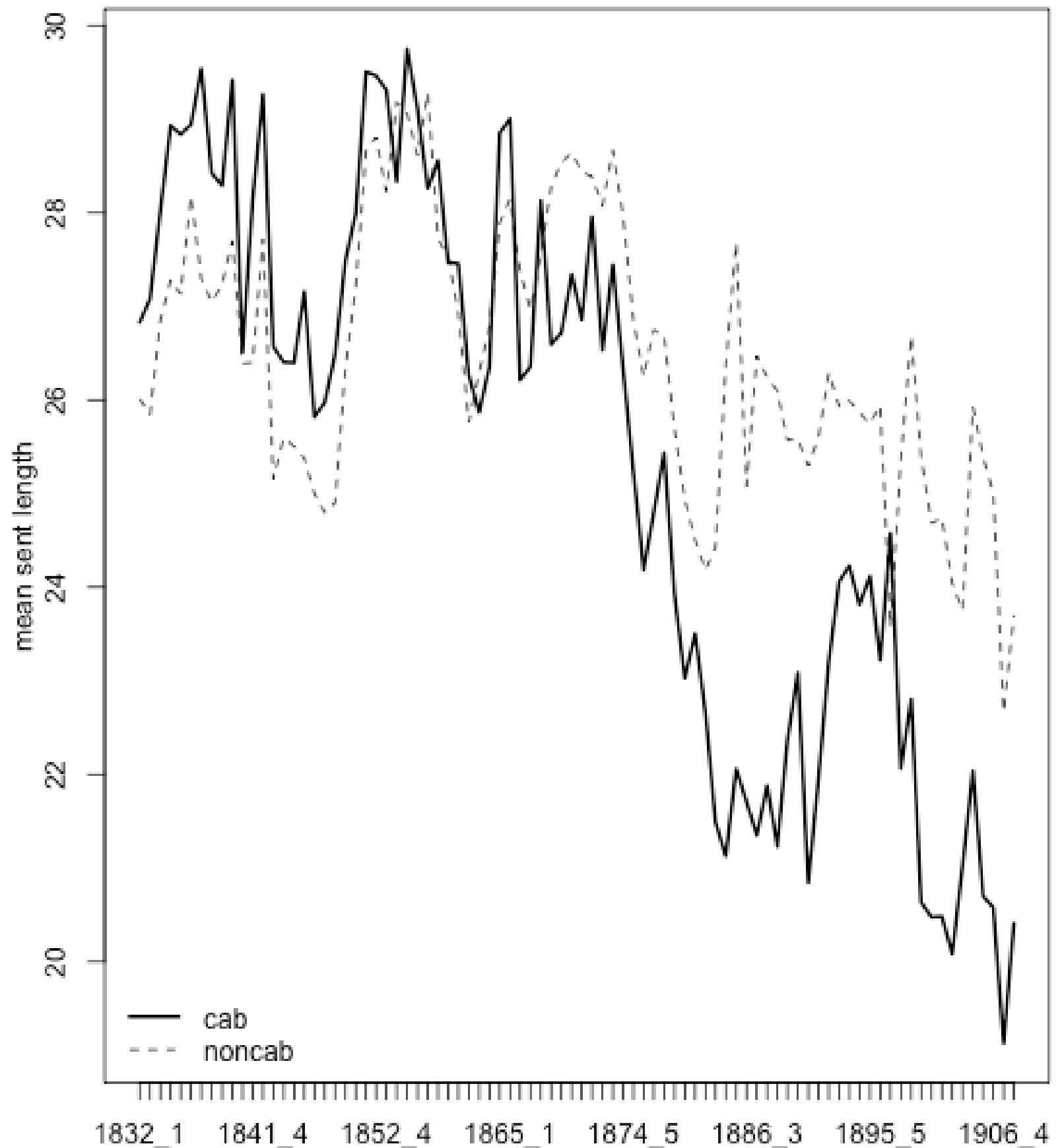
## Distribution of FRE scores

|                      | <b>Min</b> | <b>1st Qt</b> | <b>median</b> | <b>Mean</b> | <b>3rd Qt</b> | <b>Max</b> | <b>Std.<br/>Dev</b> |
|----------------------|------------|---------------|---------------|-------------|---------------|------------|---------------------|
| <b>Original</b>      | -301.80    | 42.59         | 52.25         | 52.63       | 62.14         | 205.80     | 19.94               |
| <b>Recalculation</b> | -301.78    | 42.59         | 52.25         | 52.63       | 62.14         | 205.82     | 19.94               |

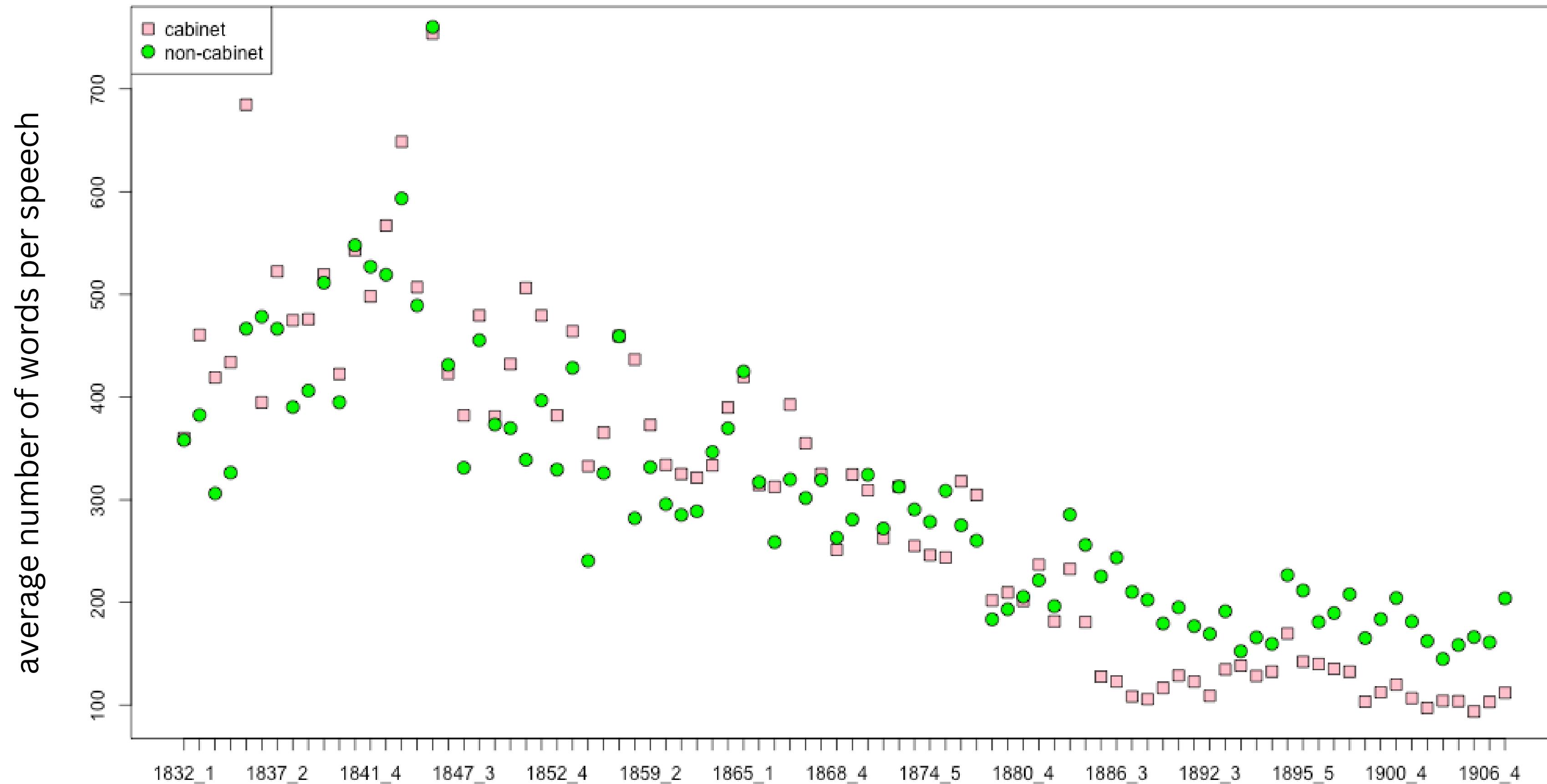
# Figure 2



# Figure 3



# Figure 4



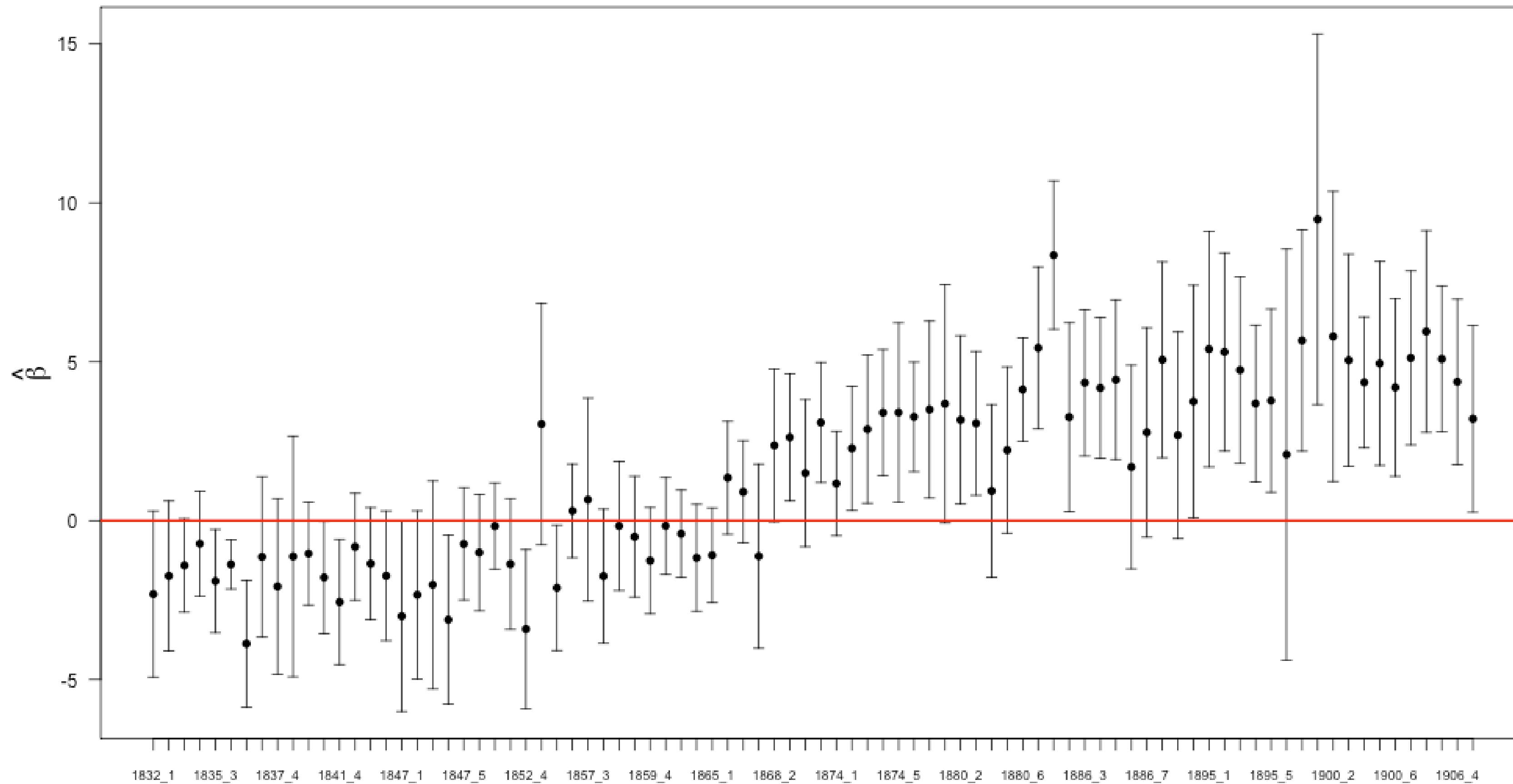
# Table 4

Regression Table of  
Comprehensability of  
speech on cabinet  
status and time

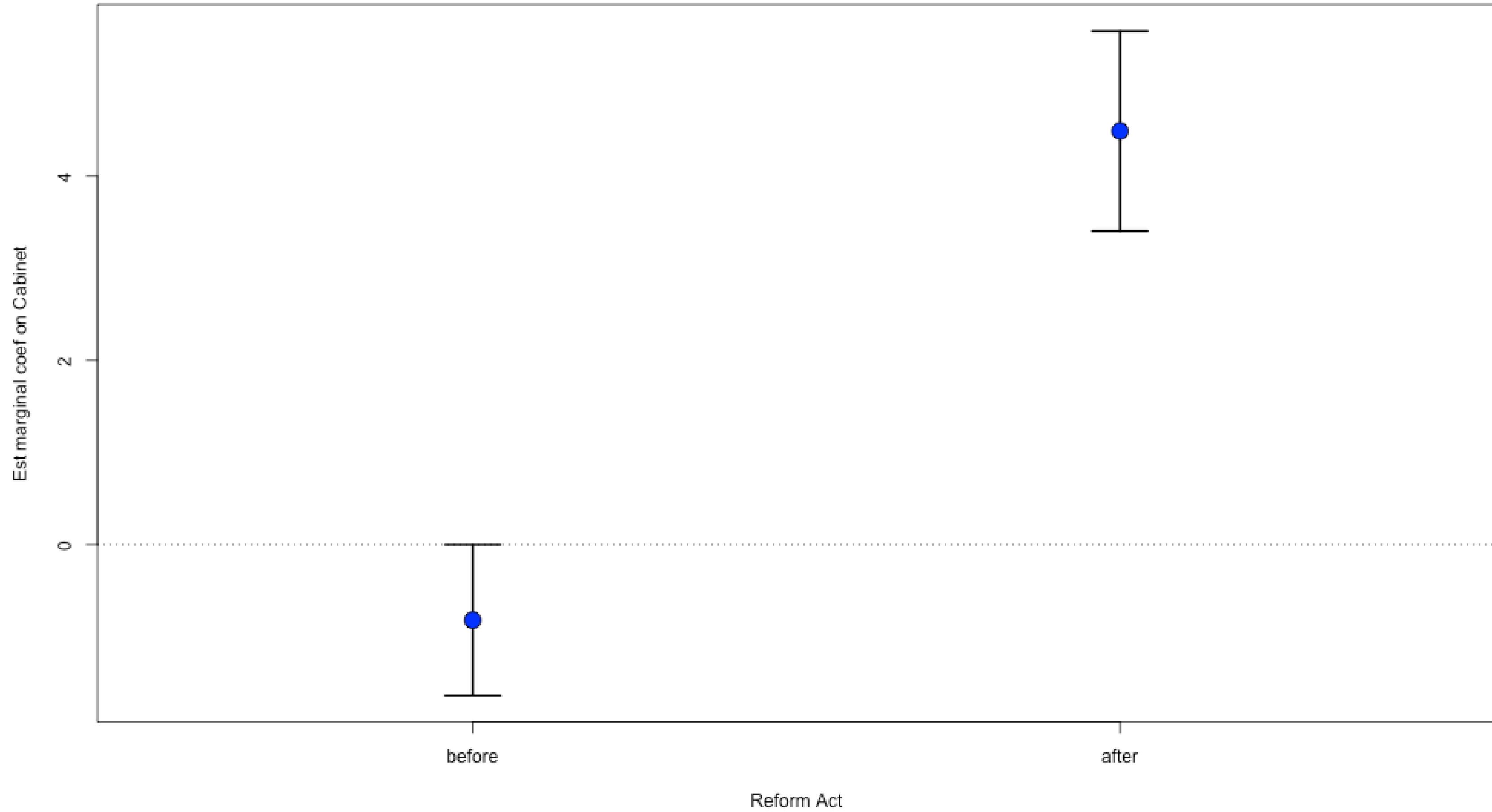
|                                 | original  | recalculated |
|---------------------------------|-----------|--------------|
| <b>intercept</b>                | 51.592*** | 51.589***    |
| <b>cabinet position</b>         | -0.78     | -0.78        |
| <b>Reform Act</b>               | 0.517     | 0.517        |
| <b>Cabinet x Reform<br/>Act</b> | 5.22***   | 5.22***      |
| <b>Liberal</b>                  | 0.45      | 0.45         |
| <b>word count</b>               | -.0013*** | -.0013***    |
| <b>Competitiveness</b>          | 0.023     | 0.023        |

\*with controls

# Figure 6



# Figure 7





# Autopsy

## Easily Available Data and Code

Was able to find all replication materials  
on Harvard's Data-verse

## Limitations with the Dataset

Researchers did not include the  
documents text- making it difficult to  
apply other preprocessing steps,  
complexity measures, etc.

**original score**

**recalculated**

Asked the Under Secretary of State for the Colonies, whether Her Majesty's Government have arrived at any practical decision with regard to the establishment of emigration bureaux for the purpose of promoting, as promised early in the Session, a systematic system of State-directed emigration?

-3.18

1.36

Can the right Honorable Gentleman give the House any information as to when the Royal Commission on the Depression of Trade is likely to report on this subject?

45.45

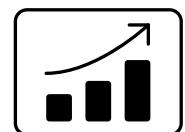
42.45

**That I cannot say til I have seen it.**

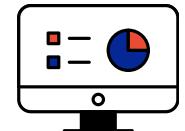
**103.7**

**103.7**

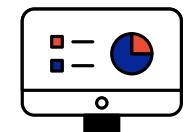
# Other Potential Updates



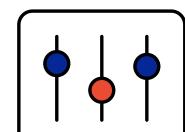
Continuing to apply other complexity measures-including Beniot



Compare other preprocessing steps



Add more control variables to regression



Evaluate speeches before and after other suffrage movement in the United States

# **Thank you!**

Feel free to ask any  
questions!

