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# Conference on Diversity, Equity and Inclusion in Economics, Finance, and Central Banking

## Yellin' at Yellen

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Gender Bias in the Federal Reserve Congressional  
Hearings

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## Disclaimer

The findings, interpretations, and conclusions are entirely those of the authors and do not necessarily reflect the views of the World Bank, the Executive Directors of the World Bank or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work.

# Motivation

- Do female central bankers face gender bias when politicians scrutinize their policies?
- Women in leadership positions play a vital role in improving welfare and weakening stereotypes about gender roles (Adams and Ferreira, 2009; Bertrand and Duflo, 2017; Rudman and Glick, 2021; Clayton, 2021; Arvate et al., 2021; Dahl et al., 2021).
- Central banking is an interesting case to study gender bias:
  - Female central bankers are underrepresented (Masciandaro et al., 2018) and face a gender promotion gap (Hospido et al., 2022);
  - Only recently, major central banks such as the Fed and the ECB were led by women for the first time in history.

# Contribution

- We focus on the tenure of Janet Yellen, the first female Chair of the US Federal Reserve in 2014-18.
- Using text analysis on the transcripts of the Federal Reserve hearings before the US Congress, we identify when legislators interrupt the Fed chair.
- We exploit the exogenous event of having a [daughter](#) as a random allocation of gender bias (Washington, 2008).
- Our findings show that legislators with no daughters were more likely to interrupt Yellen, providing further evidence of an existing gender bias in Congressional hearings.
- We contribute to the literature on central bank accountability, by showing that legislators' gender bias can prevent a smooth scrutiny of independent central banks (Fraccaroli et al., 2022, 2020; Ferrara et al., 2021).

## Background and Data

- The Fed chair appears four times per year before Congress for accountability purposes:
  - Twice before the Senate Committee of Banking, Housing and Urban Affairs and twice before the House Committee on Financial Services.
- After the Fed chair's opening statement, members of Congress ask questions to the Fed chair in a Q&A session, which is the focus of our analysis.
- We collect the transcripts of each hearing from February 13, 2001 to June 17, 2020 from *govinfo*. Data consists of 23,119 utterances in 79 hearings (40 in HoR, 39 in S) attended by 242 legislators and 4 Fed Chairs.
- Our dataset covers the mandates of Greenspan (1987-2006), Bernanke (2006-2014), Yellen (2014-2018), and Powell (2018-2022).

## Data: Interruptions as "--"

*Mrs. Yellen. It is done in negotiation with the Financial Stability Board. Any regulation that is put into effect in the United States has to go through a rulemaking process.*

*Chairman Hensarling. I understand that, but the question was, has there been any contact with the new Administration authorizing the Fed to carry on any negotiations with respect to the asset management question with the Financial Stability Board?*

Mrs. Yellen. We participate regularly as part of our established responsibilities in discussions with colleagues in the--

*Chairman Hensarling. As you know, Governor Tarullo was never confirmed by the Senate. Are you aware of any specific statutory authority he has to negotiate on behalf of the United States on the matter of asset management and systemic risk?*

Mrs. Yellen. I don't think it is a negotiation. The SEC is involved; Treasury takes part in those discussions. There are a number of U.S.--

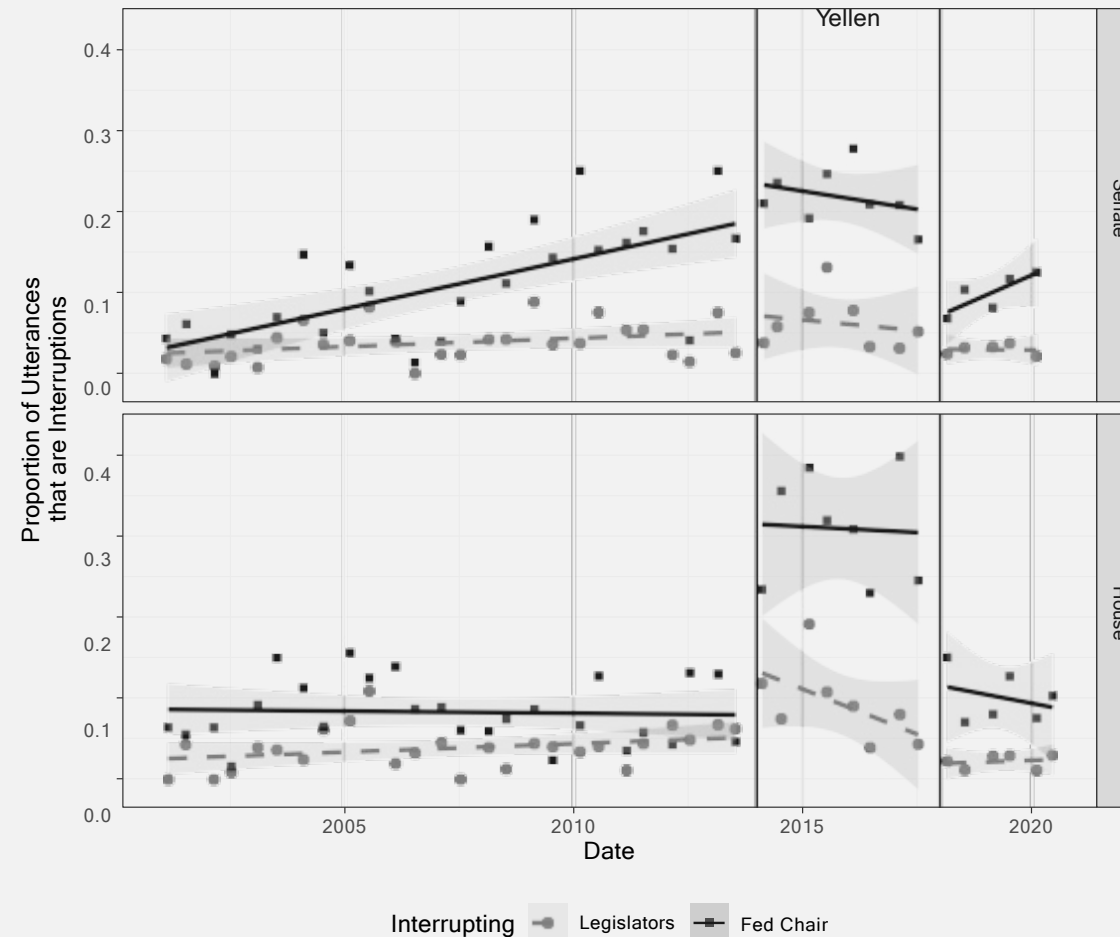
*Chairman Hensarling. Do you believe that the new Administration should have the ability to nominate a Vice Chair for Supervision, and if confirmed, that person would be the one to be officially tasked with these duties?*

Mrs. Yellen. We look forward to a nomination to the position of Vice Chair for Supervision and--

*Chairman Hensarling. Don't weall, MadamChair. Don't weall. Mytime has expired. I nowrecognize the ranking memberfor 5 minutes.*

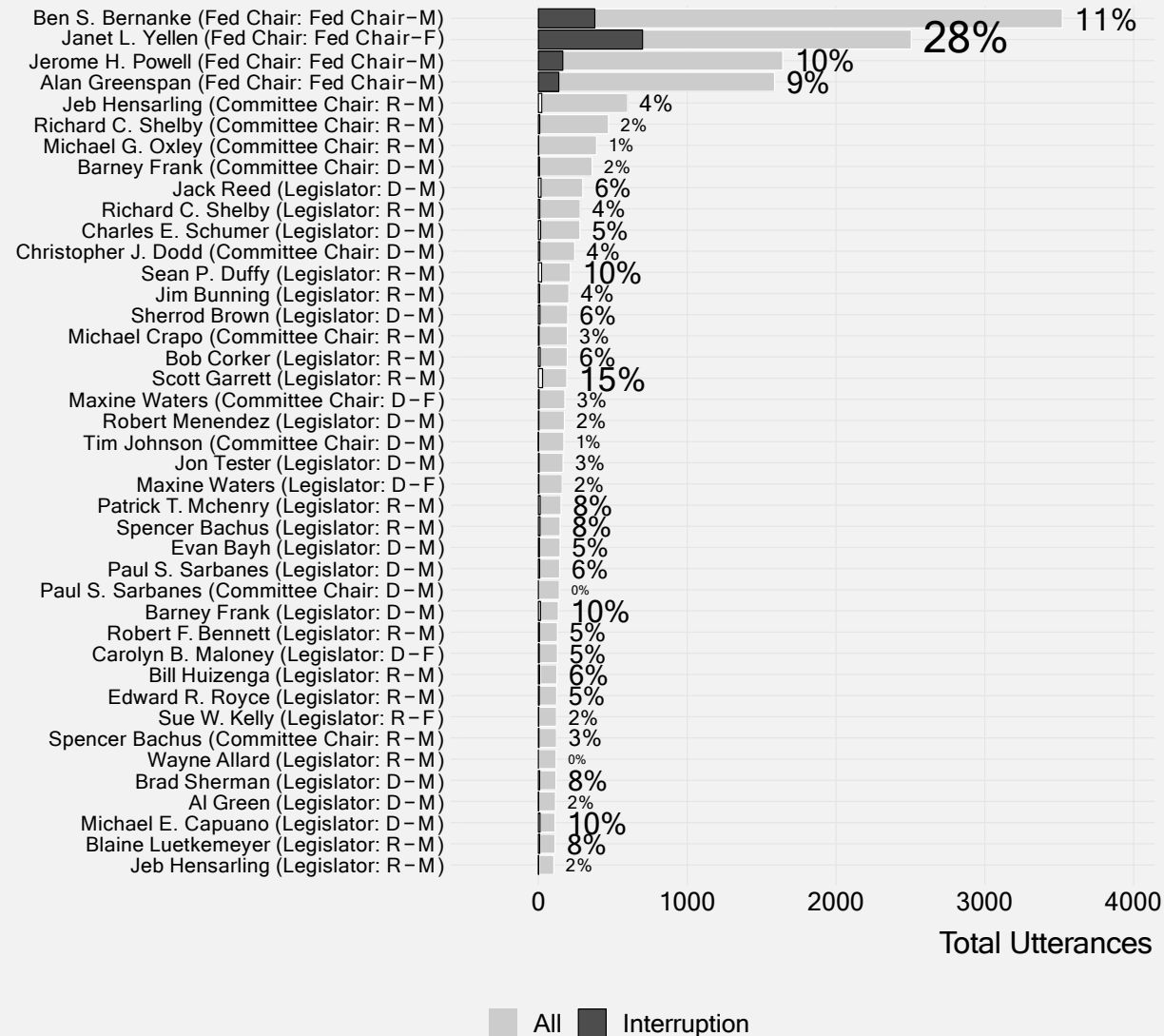
**Figure 1:** Example of a transcript with interruptions (marked in red, our addition).

# Proportion of utterances that are interruptions over time



Proportion of utterances that are interruptions over time, separated by House (left panel) and Senate (right panel) hearings, comparing utterances that interrupt a Fed chair to those that interrupt other legislators. The vertical lines denote the mandate of Janet Yellen as chair of the Federal Reserve (February 3, 2014 - February 3, 2018).

# Share of interrupted utterances by most talkative speaker





## Specification 1: Baseline Specification

Is Yellen interrupted more than other Fed Chairs?

$$\text{Interrupted}/\text{ing}_{u,i,t} = \alpha_i + \delta_t + \gamma U_u + \lambda X_{i,t} + \varepsilon_{u,i,t} \quad (1)$$

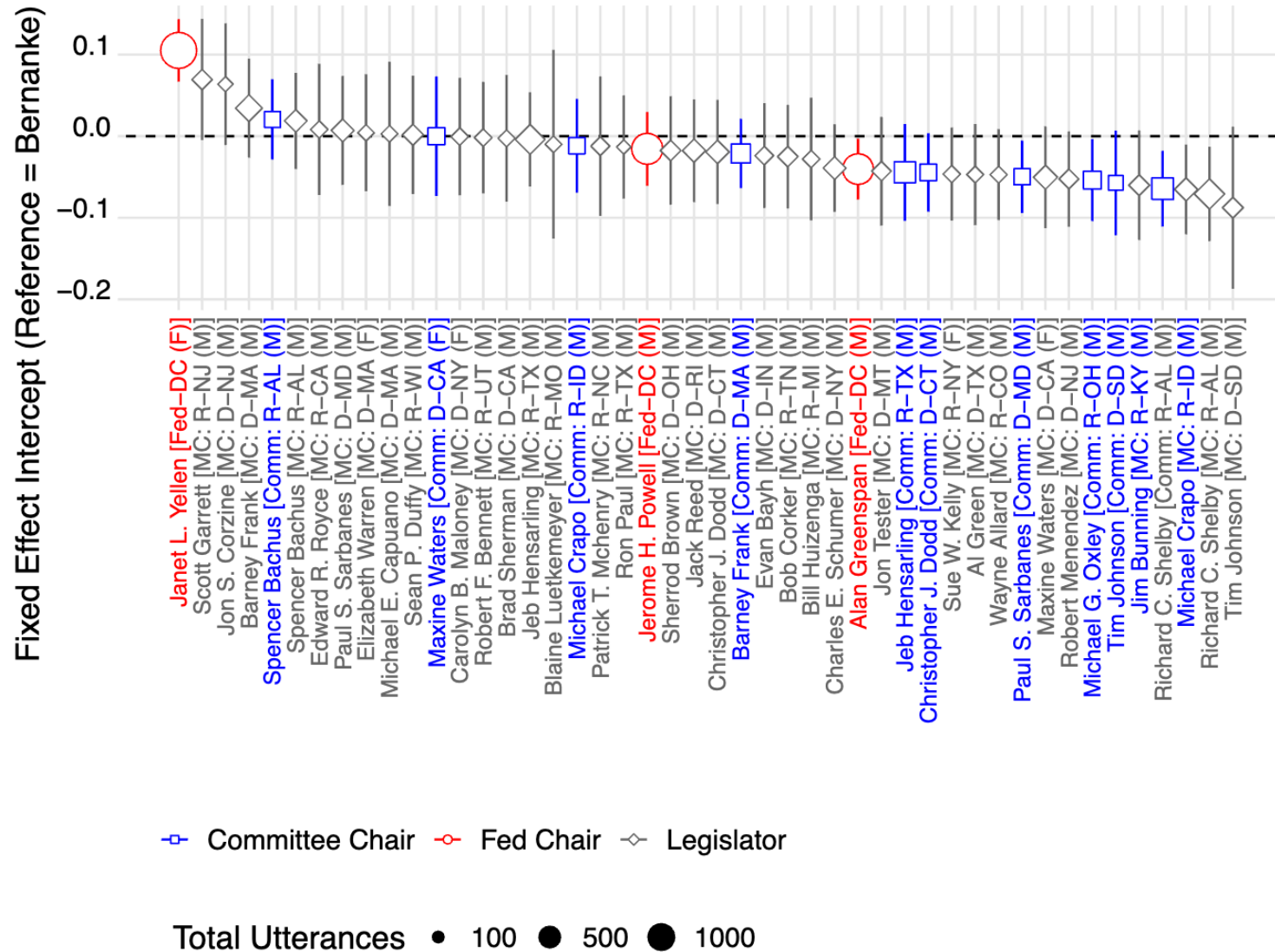
- where  $\text{Interrupted}/\text{ing}_{u,i,t}$  is a binary measure of whether utterance  $u$  by speaker  $i$  in time  $t$  is interrupted (or interrupts someone else);
- $\alpha_i$  are fixed effects for each speaker who is being interrupted, relative to Bernanke;
- $\delta_t$  are hearings fixed effects
- $X_{i,t}$  are speaker-level controls: total utterances by that speaker in that hearing, incumbent vote share, gender, seniority, age, party affiliation, ideology based on voting, support for Yellen's confirmation, support for the 'Audit the Fed' bill.
- $U_u$  are utterance-level controls: logged n. of characters, indicator for whether the utterance itself interrupts/is interrupted by the preceding, the tone of the utterance (based on Google's Perspective API), the topic of the utterance (based on LDA).

## Specification 2: Identifying Gender Bias

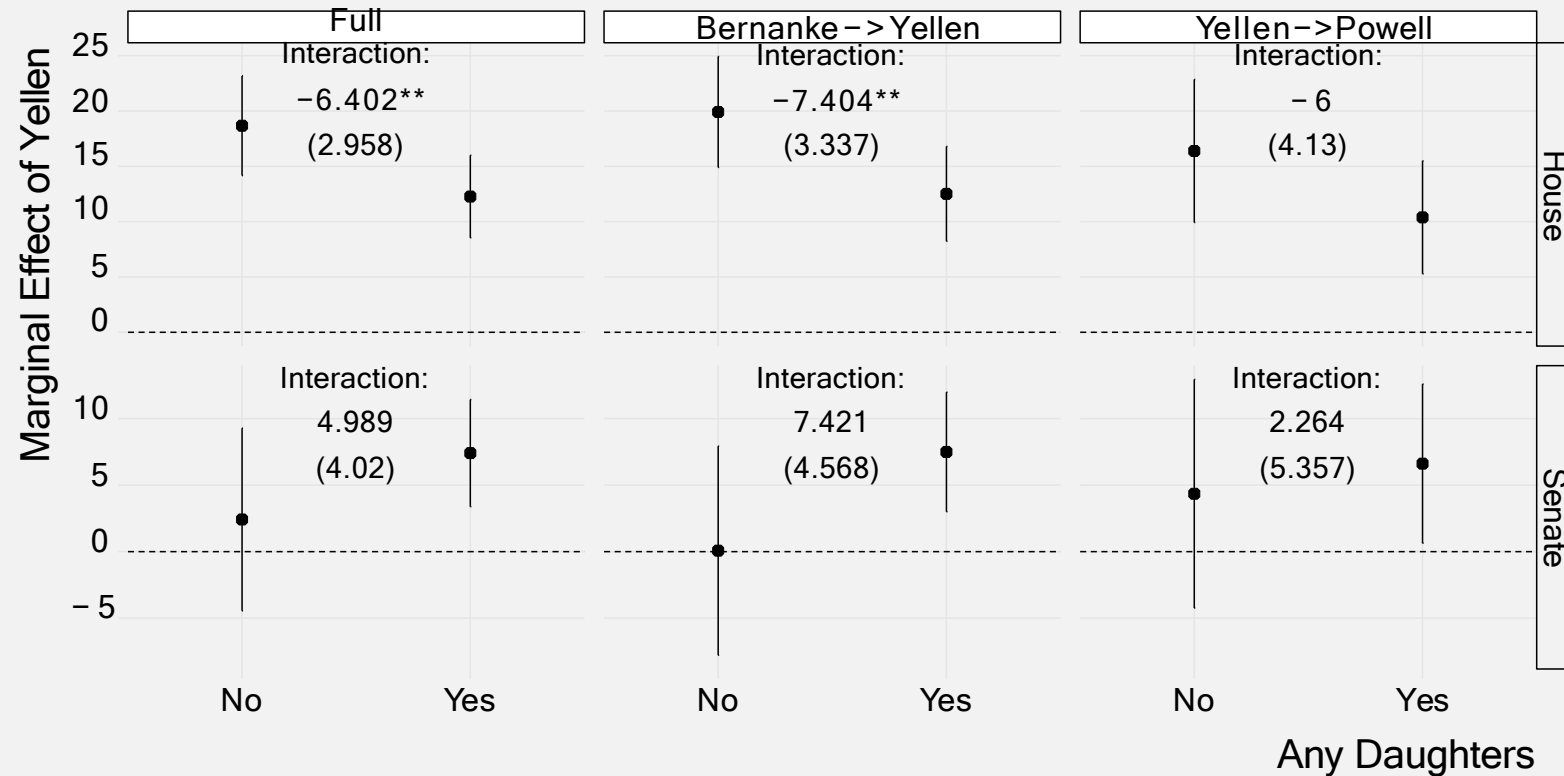
$$\begin{aligned} \text{Interrupting}_{i,\text{Fed},t} = & \beta_1 \text{Yellen}_t + \beta_2 \text{I Daughter}_{i,t} \\ & + \beta_3 \text{Yellen}_t * \text{IDaughter}_{i,t} + \lambda X_{i,t} + \varepsilon_{i,j,t} \end{aligned} \quad (2)$$

- *Daughter* = 1 if the legislator has at least one daughter, zero otherwise;
- $\beta_3$  captures the difference in the degree to which legislators with and without daughters increased the % of interruptions to the Fed chair during Yellen's tenure versus either Bernanke or Powell.
- We expect  $\beta_3 < 0$ , as having daughters should attenuate the likelihood of a sexist reaction against the first female chair of the Federal Reserve.
- Data collapsed at speaker-hearing level (no controls at utterance level).

# Results: Specification 1 - Fixed Effects

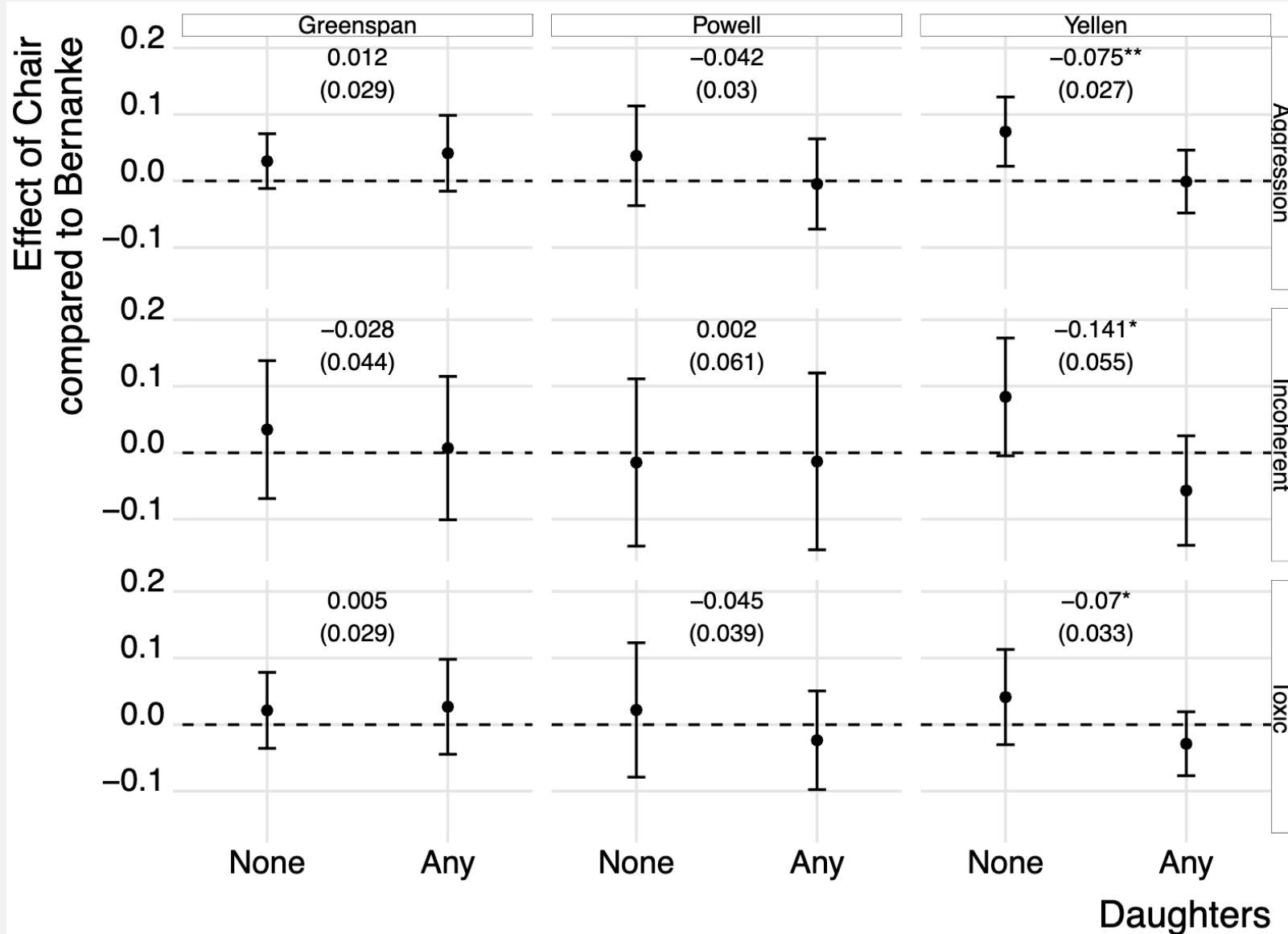
[Table format](#)[House vs Senate](#)

## Results: Specification 2 - Interruptions and Daughters



**Figure 2:** Marginal effect of Yellen taking over as chair of the Fed on whether legislators attending hearings interrupted the chair of the Fed, interacted with whether the legislators had any daughters.

# Toxicity: With and Without Daughters



## Robustness Checks

- [Topics](#): Yellen did not discuss more frequently topics that are more likely to be interrupted compared to other Chairs. She's more likely to be interrupted on *any* topic than other Chairs.
- [Tone](#): Yellen's tone is not significantly different from that of other Fed chairs at the 95% level of confidence.
- [Alternative measure of sexism](#): 'women' score based on interest group ratings;
- [Dyadic](#) and [Diff-in-diff](#) specifications;
- [Political context](#): we subset the hearings specific to a single presidential administration (Obama's terms for Bernanke to Yellen, Trump's term for Yellen to Powell) and to the final year of one chair and the first year of the following.
- [Hostility](#): The interruptions toward Yellen are more aggressive, incoherent and toxic (based on Google Perspective API).

# Conclusions

- Exploiting Yellen's tenure as a bundled treatment, we show that gender bias affects the congressional scrutiny over the Fed.
- Legislators interrupted Yellen more than all the other male Fed chairs.
- Gender bias drove those interruptions: legislators with daughters were less likely to interrupt Yellen. This result is strong in the House, but not in the Senate.
- Our contribution points to the relevance to recognize and remove the subtle layers of a political glass ceiling on women and create a more equitable policy environment.

# Thank you

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