

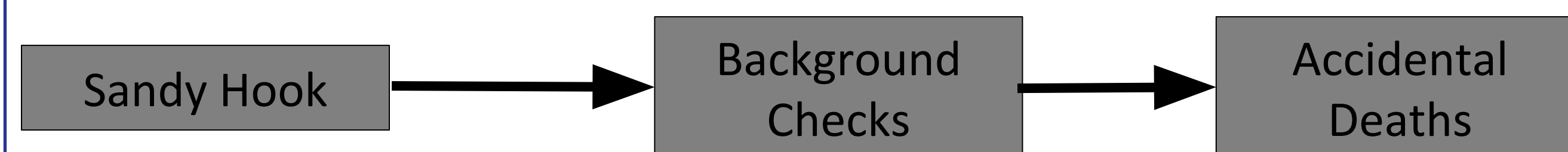
# The Exception, not the Rule: Sandy Hook and Firearm Purchases

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SOC 504: Advanced Social Statistics

## Extension: State-Level Differences in Shooting Effects?

**Primary Extension Question:** How do gun sales differ at the state-level following mass shootings?

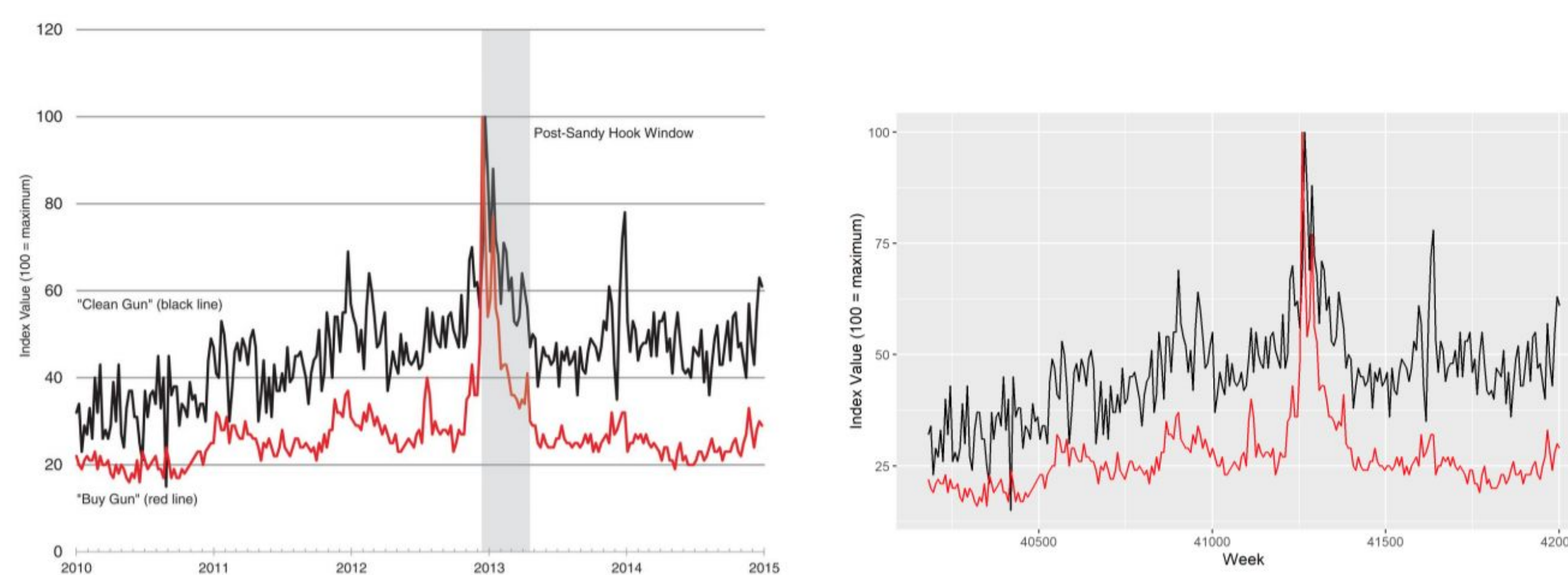
- Original 'Firearms and Accidental Deaths' study established causal link between gun exposure and accidental deaths
- Defended gun-sale background check counts used as proxy for gun sales
- Looking at their data, we hypothesized the spike in sales was unique to the Sandy Hook Shooting, questioning their first-effect relationship



## 'Firearms and Accidental Deaths' Replication Results

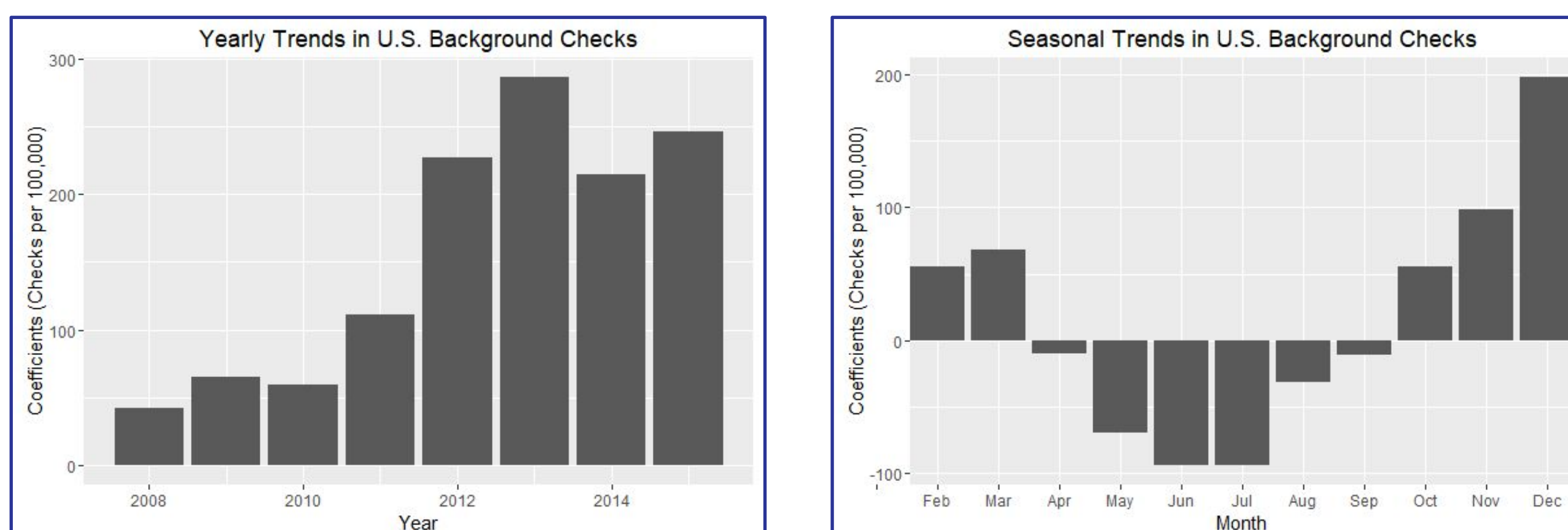
Despite some inconsistency between the original replication code and our edited code, our replication exactly matched the original results.

**Google Trends Data with Respect to Sandy Hook Shooting - Original (L) vs. Replication (R)**

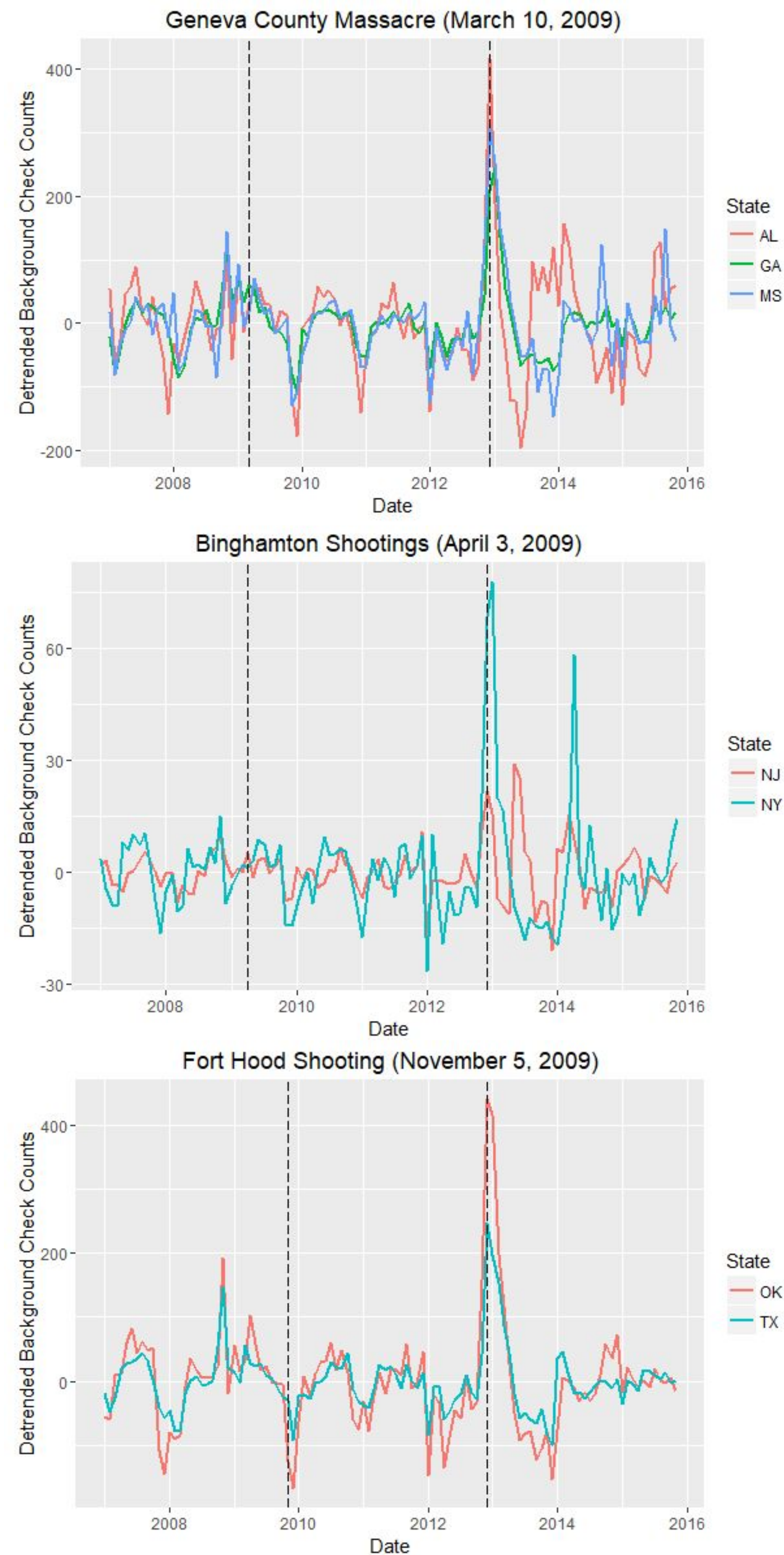


## Data Processing: Detrending with Fixed Effects

To more precisely analyze background-check time series data, we detrended with month and year fixed effects. Coefficients shown below:



## Extension Findings: Sandy Hook Was the Outlier



## Extension Results and Analysis

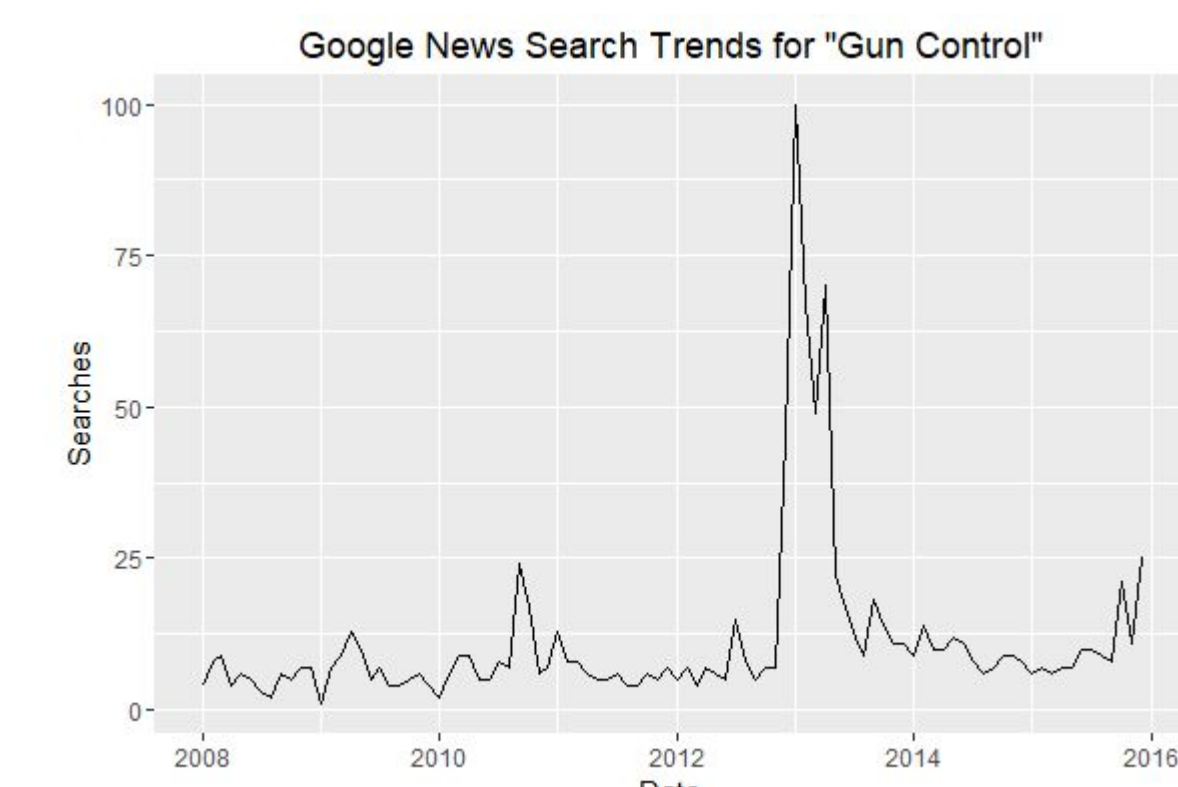
**Conclusion:** Different states do respond to mass shootings differently - but Sandy Hook was exceptional in its generated response.

- The Sandy Hook shooting had a positive national effect on gun sales, with effects in states including Texas, Alabama, and New York
- In contrast, other shootings (including the Geneva County, Binghamton, and Fort Hood shootings) did not precede increased gun sales
- Results are convincing due to highly parallel nature of trends; background check numbers unanimously declined in local states after all shootings except for Sandy Hook
- Difference likely due to media coverage and analysis of Sandy Hook shooting, in political aftermath

## Implications and Discussion

**This finding raises the question: What caused Sandy Hook's impact to be so different?**

- Google Trends data suggest that issues involving children and gun control spiked amongst Google searches post-Sandy Hook; this proves Sandy Hook was an emotionally-charged issue



- Sandy Hook occurred after President Obama's reelection, prompting a more concerted Democratic effort to pass gun control legislation

**Intuition: More aggressive efforts to pass gun control met with fierce opposition and outreach by the National Rifle Association (NRA).**

**Possible Extension Idea:**

- Scraping Twitter data to check the frequency of NRA tweets to determine NRA response to mass shootings
- **Is NRA outreach post-shootings drumming up gun sales?**

## References

Levine, Phillip B., and Robin Mcknight. "Firearms and Accidental Deaths: Evidence from the Aftermath of the Sandy Hook School Shooting." *Science*, vol. 358, no. 6368, 2017, pp. 1324–1328., doi:10.1126/science.aan8179.

Rucker, Philip, and Sari Horwitz. "On Gun Control, Obama's Record Shows an Apparent Lack of Political Will - until Now." *The Washington Post*, WP Company, 23 Dec. 2012,