

# Making Policy with Data

*An Introductory Course on Policy Evaluation*

## **Policy Briefing**

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May 30

# Difference-in-Differences?

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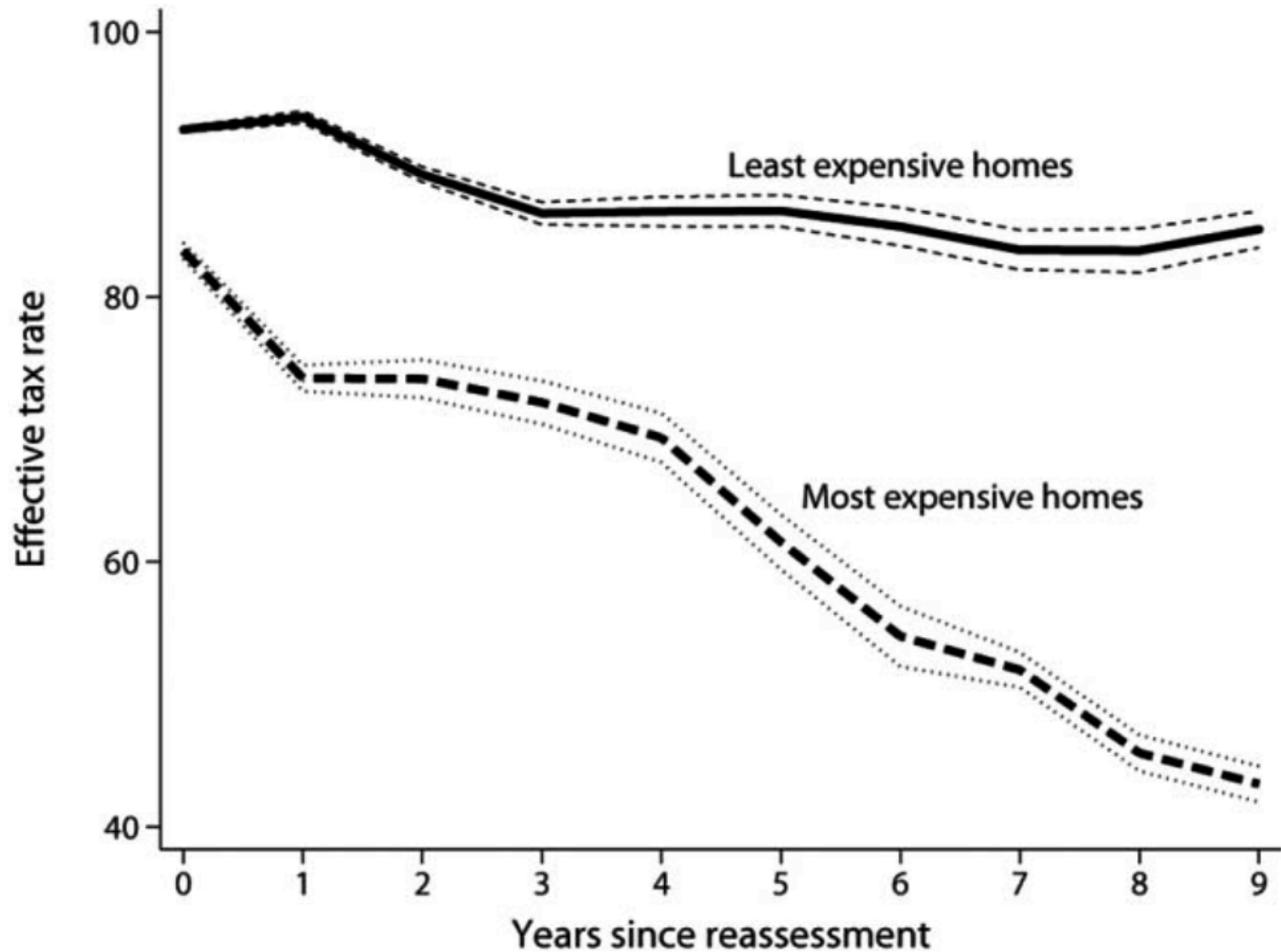
- First Difference: before and after the change to appoint among the treatment group
- Second Difference: between the treatment and control group
- **Research Question:** democratic “accountability” on tax burdens

# Does Direct Democracy Always Mean Better Governance?

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- Why difficult to study?
  - Countries, state, districts are very different
  - Institutions are endogenous to “outcomes”
- **Research Question:** democratic “accountability” on tax burdens

# Voter Don't Like Frequent Property Assessment



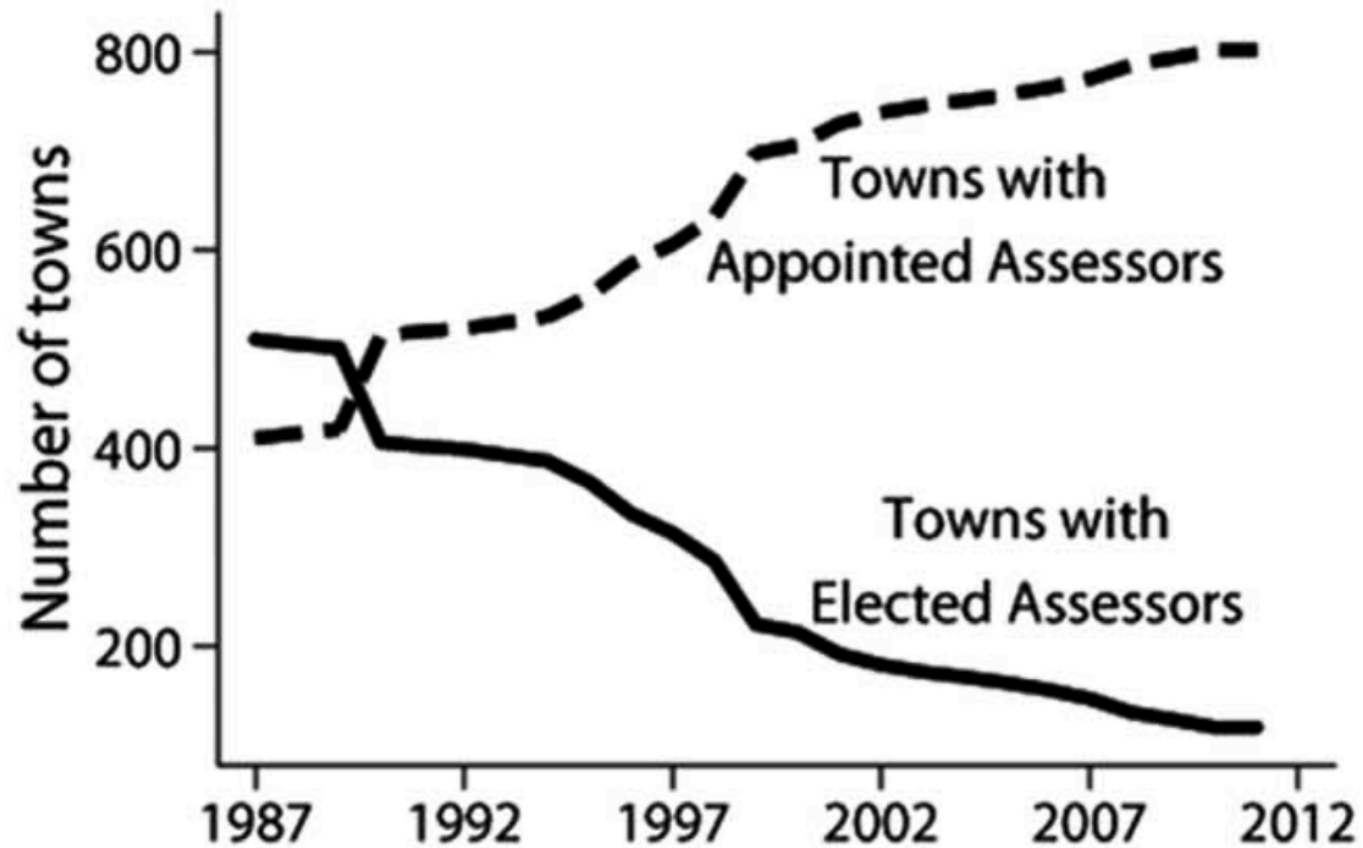
# New York Towns

## Towns changing to appointment

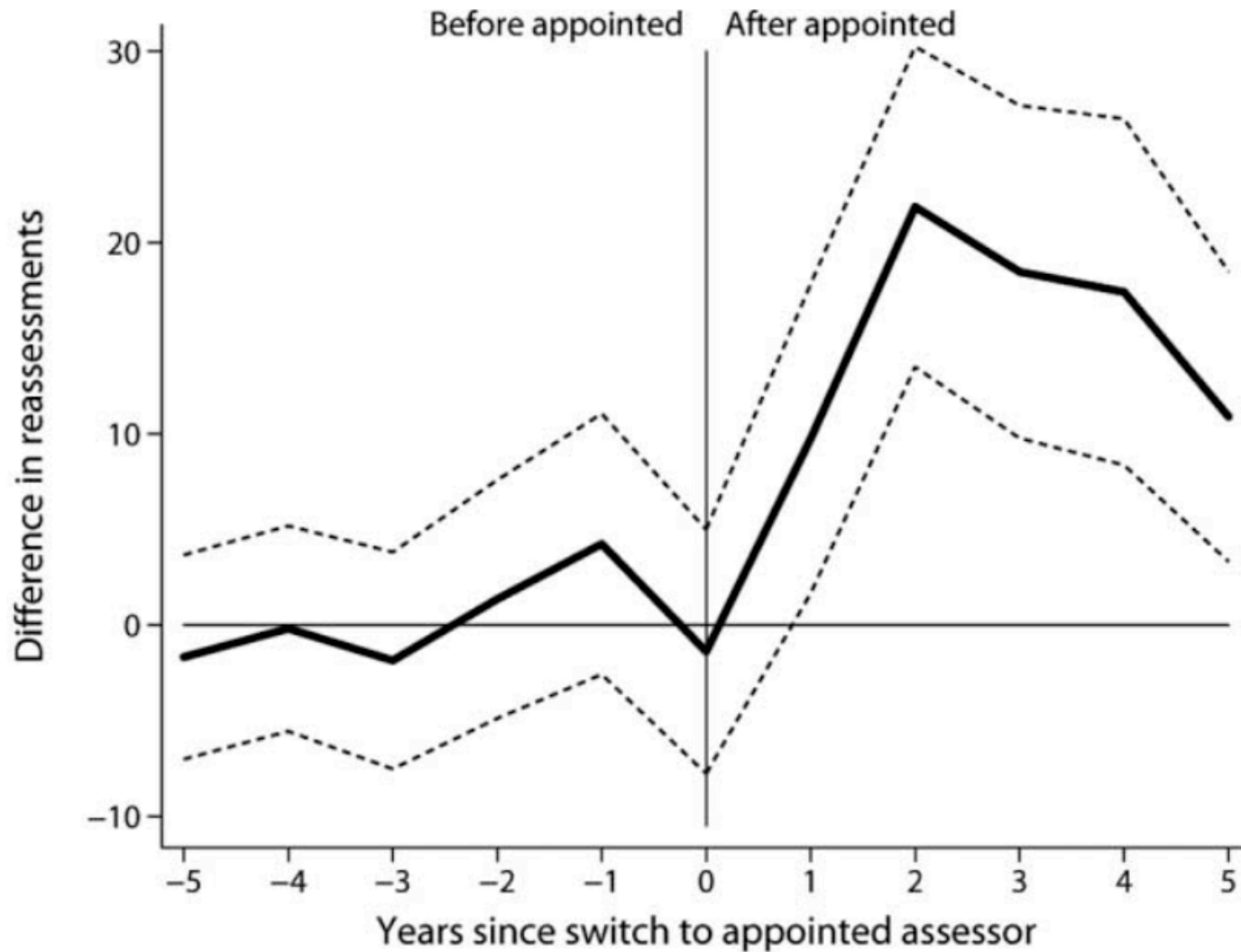


# New York Towns

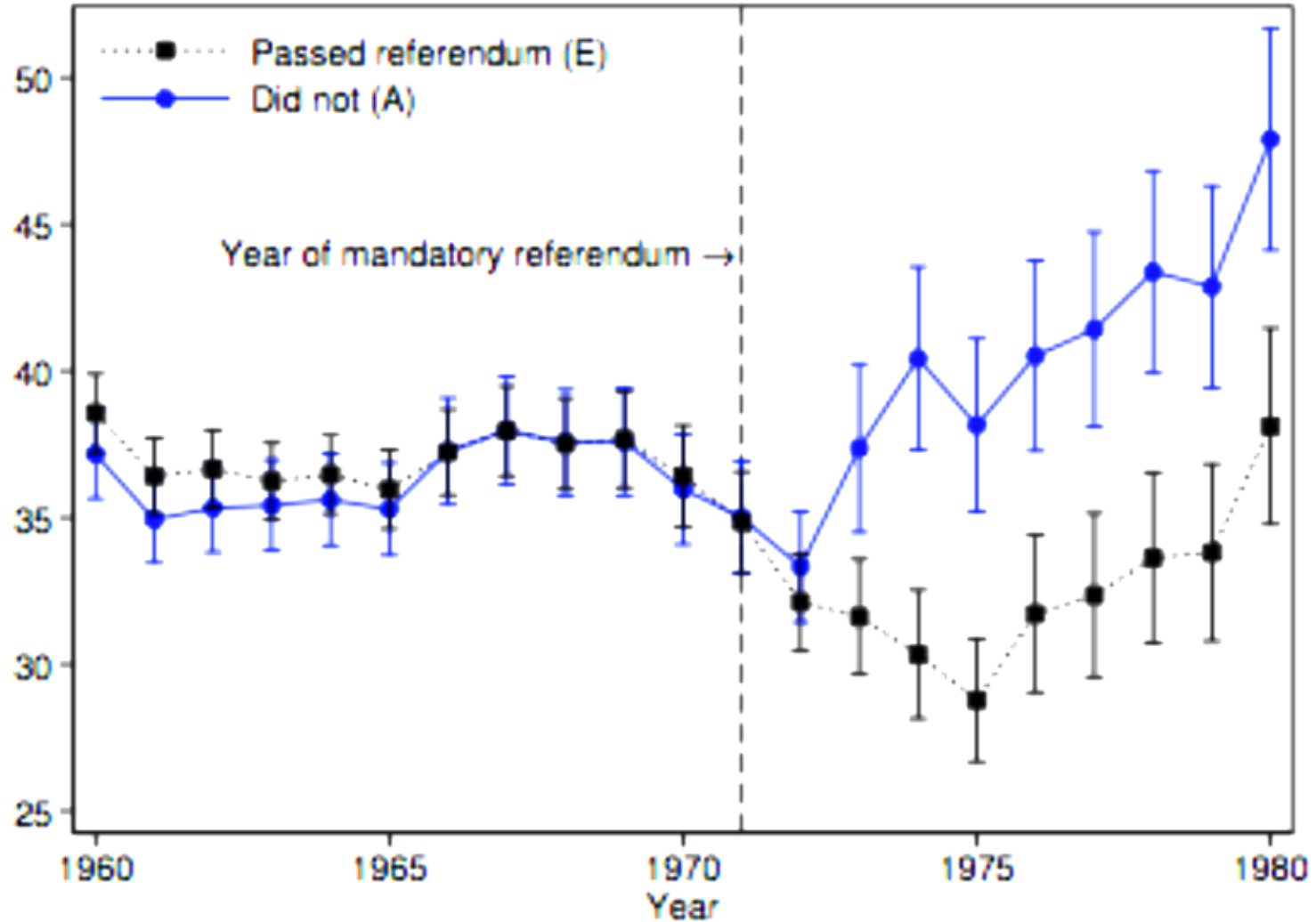
## Changes from election to appointment



# Appointed Assessors Conduct More Assessment

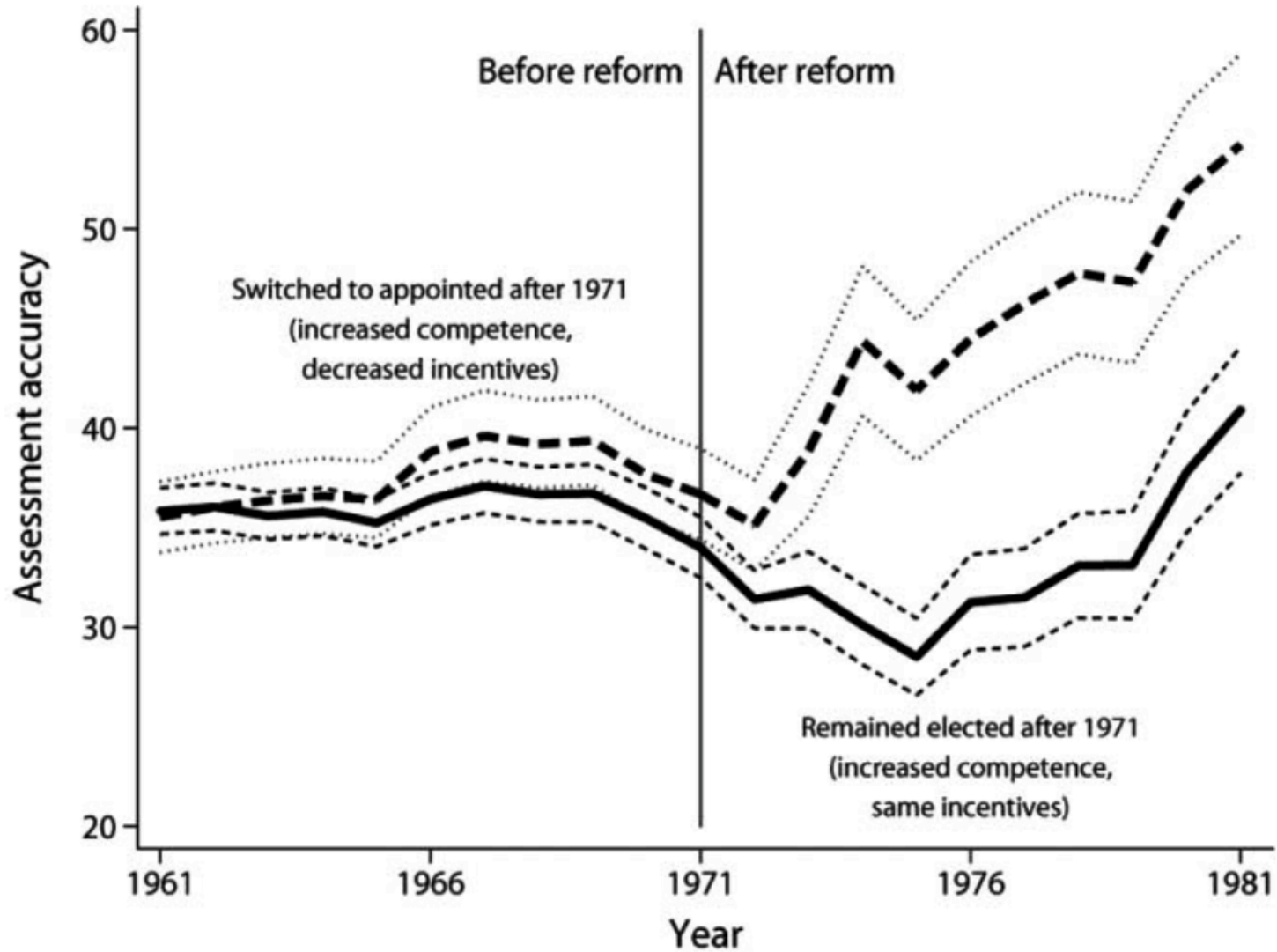


# Direct Democracy, Better Governance?

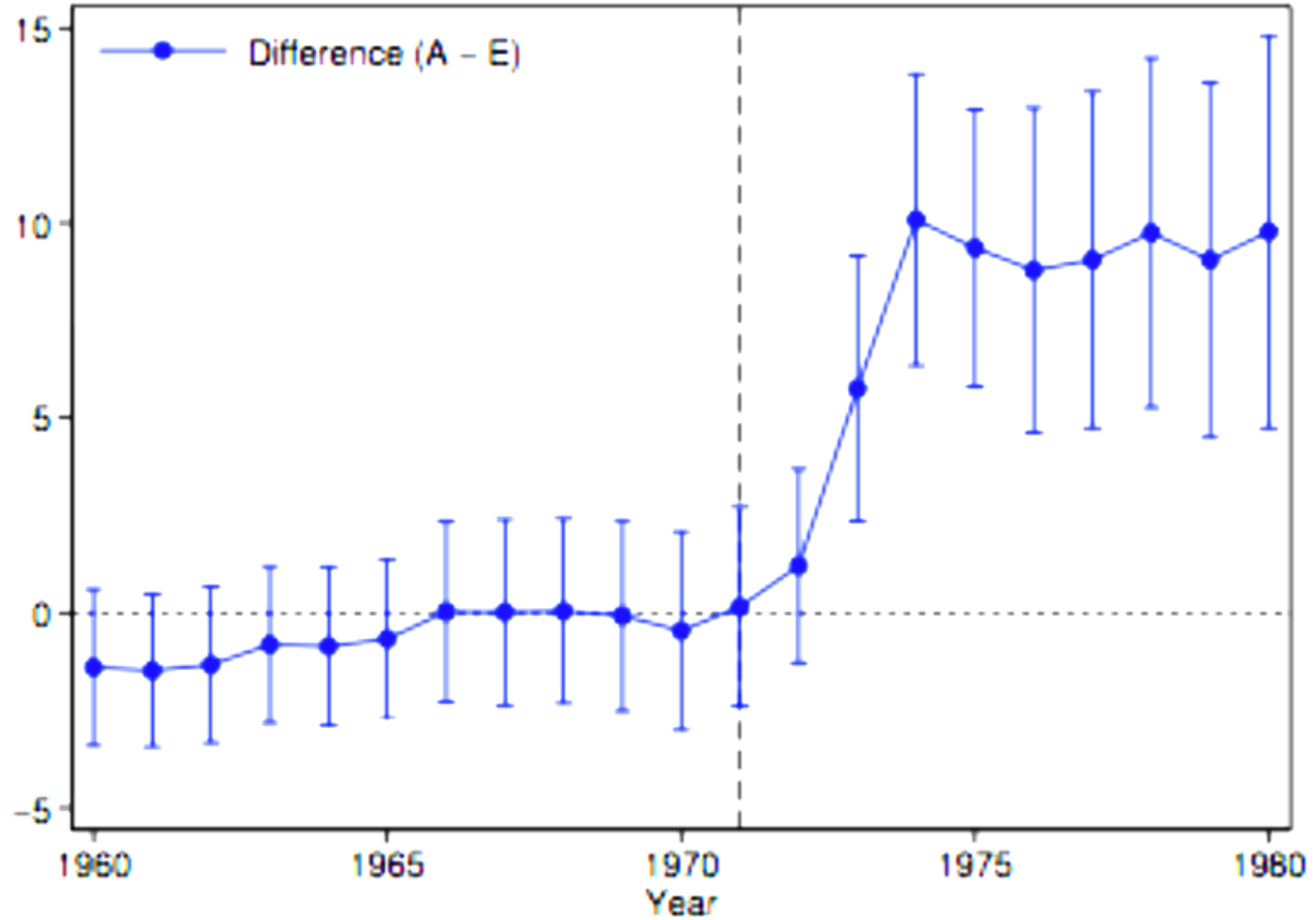




# Appointed Assessors Make “Better” Assessment



# Direct Democracy, Better Governance?



## Take-aways

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- Diff-in-diffs can be more than 2 periods
- More responsiveness  $\neq$  better governance

## Problem Set 4

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# **Does Indiscriminate Violence Incite Insurgent Attacks?**

## **Evidence from Chechnya**

Does a state's use of indiscriminate violence incite insurgent attacks? To date, most existing theories and empirical studies have concluded that such violence is highly counterproductive because it creates new grievances while forcing victims to seek security, if not safety, in rebel arms. This proposition is tested using Russian artillery fire in Chechnya (2000 to 2005) to estimate indiscriminate violence's effect on subsequent patterns of insurgent attacks across matched pairs of similar shelled and nonshelled villages. The findings are counterintuitive. Shelled villages experience a 24 percent reduction in posttreatment mean insurgent attacks relative to control villages. In addition, commonly cited "triggers" for insurgent retaliation, including the lethality and destructiveness of indiscriminate violence, are either negatively correlated with insurgent attacks or statistically insignificant.

# Problem Set 4

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## Variable Definitions:

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pret	Insurgent attacks in pre-treatment period
post	Insurgent attacks in post-treatment period
diff	post - pret
treat	=1 for treated villages, =0 otherwise
lpop2000	log of population in 2000
poverty	severity of need for humanitarian assistance
tariq	=1 if population dominated by Naqshbandi, =0 otherwise
iso	number of settlements within $5km^2$ of the swept village
lnn	log of distance to nearest village
garrison	=1 if Russian garrison stationed in village, =0 otherwise
reb	=1 if village controlled by rebels, =0 otherwise
swept	=1 if village swept, =0 otherwise
lelev	log of elevation of village

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**Buzzword:**

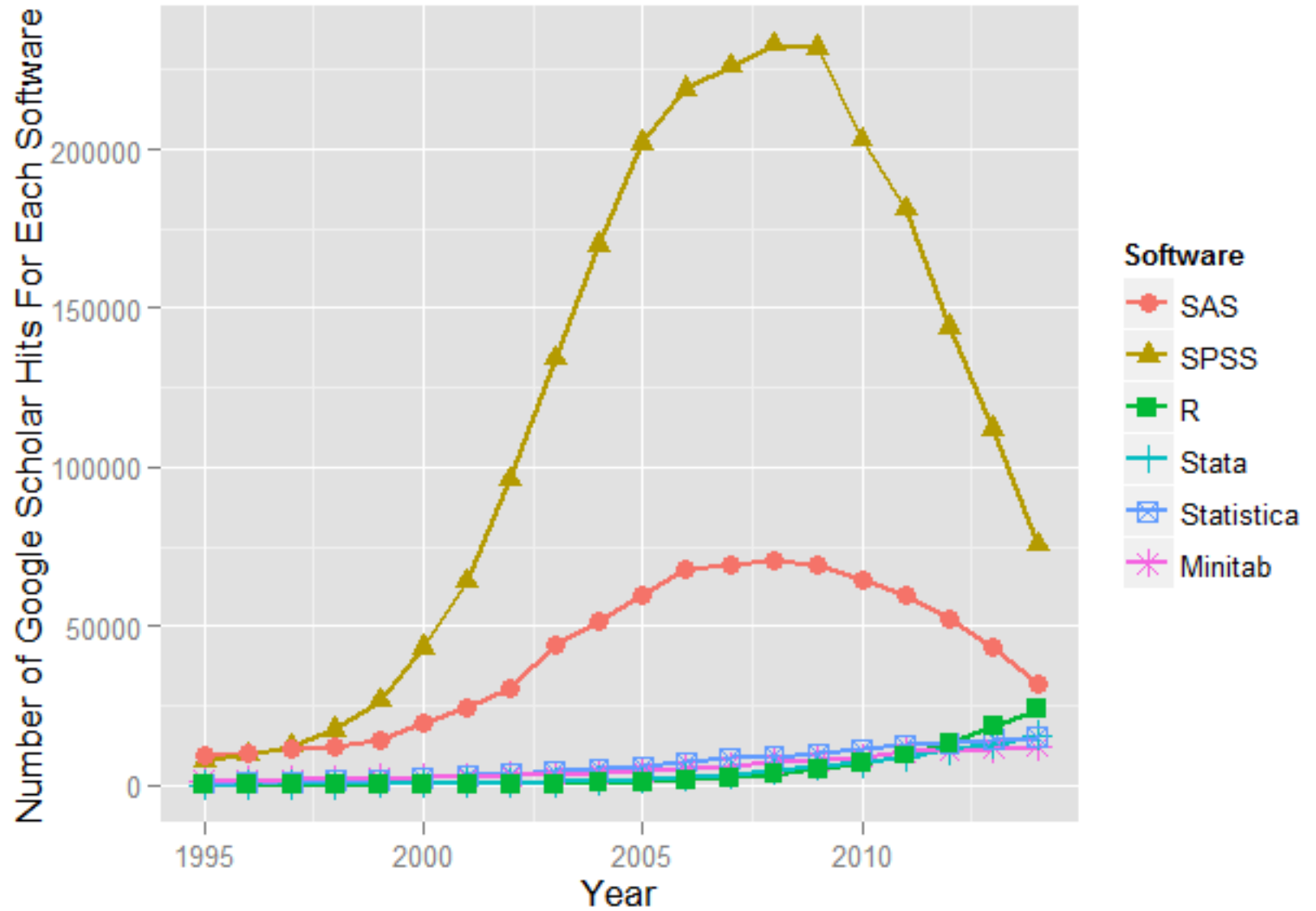
# **A Comparison of Data Analysis Softwares**

# Stata, R, Python, etc

Name	Advantages	Disadvantages	Open source	Typical users
R	Library support; visualization	Steep learning curve	Yes	Finance; Statistics
Matlab	Elegant matrix support; visualization	Expensive; incomplete statistics support	No	Engineering
SciPy/NumPy/Matplotlib	Python (general-purpose programming language)	Immature (but getting better)	Yes	Engineering
Excel	Easy; visual; flexible	Large datasets	No	Business
SAS	Large datasets	Expensive; outdated programming language	No	Business; Government
Stata	Easy statistical analysis		No	Science
SPSS	Like Stata but more expensive and worse			

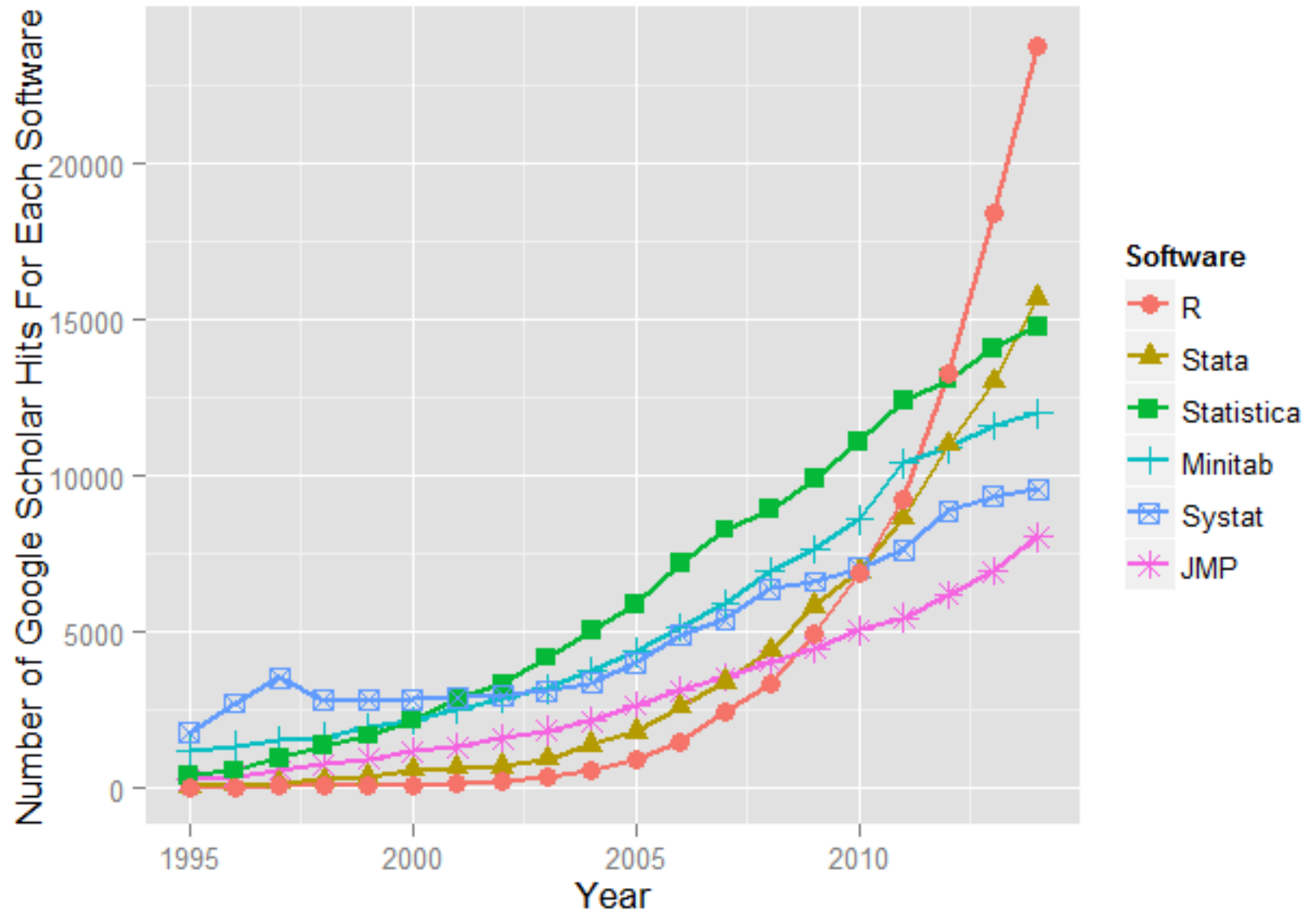
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## In Academia





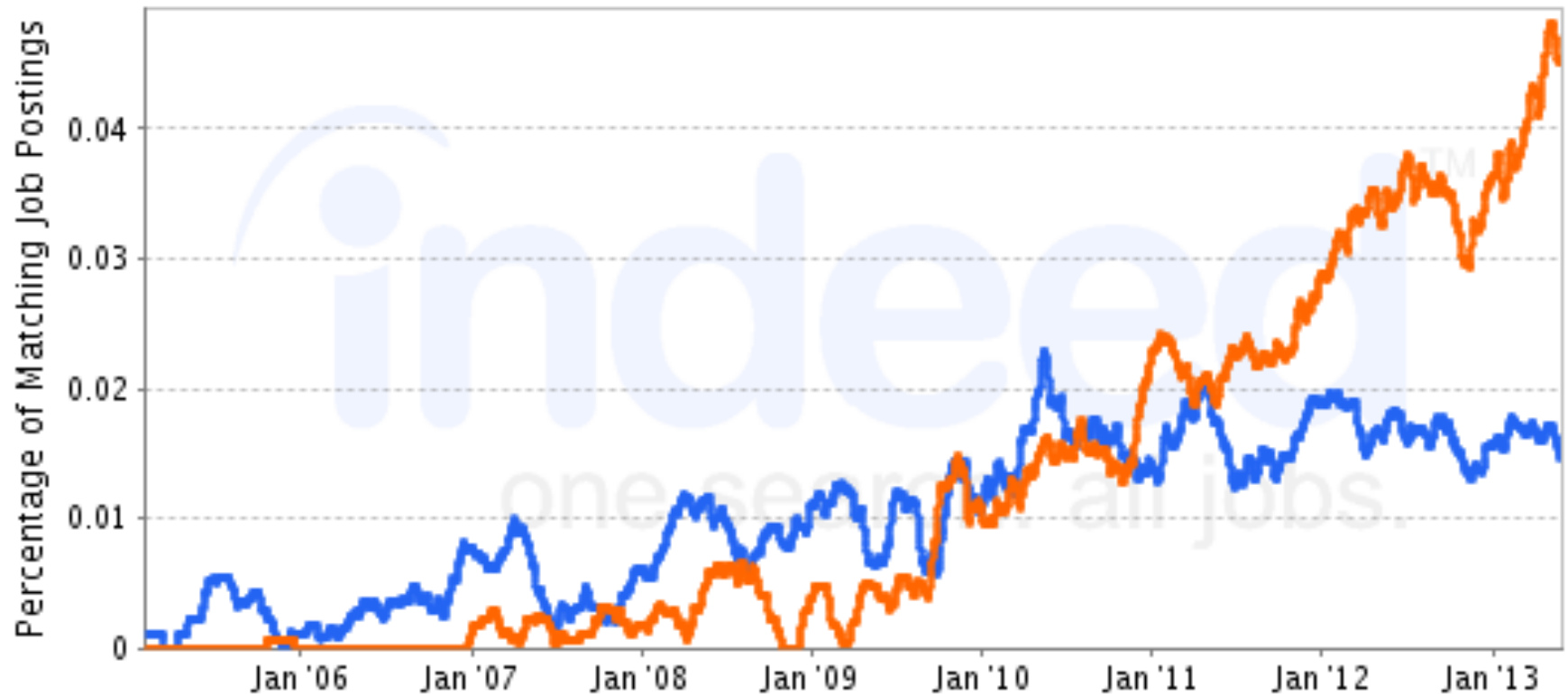
## In Academia



# Job Trends

## Job Trends from Indeed.com

- "r sas" or "sas r" or "r or sas" or "sas or r" or "r spss" or "spss r" or "r or spss" or "spss or r"
- "stata r" or "r stata" or "stata or r" or "r or stata" or "sas stata" or "stata sas" or "sas or stat"



# Job Trends

## Job Trends from Indeed.com

- R and ("big data" or "statistical analysis" or "data mining" or "data analytics" or "machine le
- python and ("big data" or "statistical analysis" or "data mining" or "data analytics" or "mact

