Comments on Hashem Dezbakhsh and Paul Rubin's "From the 'Econometrics of Capital Punishment' to the 'Capital Punishment' of Econometrics"

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Key Points

- Understanding their two key points:
  - Replication
  - Sensitivity analysis
- Understanding Donohue and Wolfers' critique
  - Instrument validity
  - Statistical precision
  - Value of transparent approaches

On Replication

❑ "*The only undisputable finding of Donohue and Wolfers is that the existing deterrence findings can be easily replicated, meeting an important requirement of scientific inquiries. This findings, which is unfortunately lost in the welter of exaggerated claims, is* a testimony to the credibility *of the existing deterrence evidence*"

❑ Requires a strained definition of "replication"

  ▪ Yes: if "replicate" = Run your programs on your data using your program (but on my computer)
  ▪ No: if "replicate" = Run the regression described in your paper

❑ Questionable commitment to replication

Commitment to Replication

Dear Paul:
As you likely know, I'm slated to discuss your paper at CELS next week…. I tried replicating the results but so far have not been able to match your numbers. Would you mind sharing your data and code?

Friday response (cc'ing Hashem Dezbakhsh)
Will get back with the codes etc.

Monday response
The data we have used are the same date [sic] we sent you earlier and the same data you used for your paper… With the programs we had sent you, you should be able to replicate.

…it is the DS data that I'm asking for. I have never received either the data or the code from that paper.

The data for that project was just downloaded from the Bureau of Justice Statistics Site and FBI Uniform Crime Reports. You have this data and used it for your paper.

I was never able to replicate the results from Dezbakhsh and Shepherd with much precision. I was hoping that you would share your data so that I could replicate… It is fairly standard practice to provide the data underlying already-published work. It is also fairly standard practice to provide the data to a discussant. I am hoping that you are willing to meet these norms.

I don't have the data. It is on my co-author's desktop. He [Dezbakhsh] is on the road and has no access to it at the moment. Sorry.

To Joanna Shepherd:
You may recall that in mid 2006 I asked sharing the data from the Dezbakhsh and Shepherd paper… At the time, you suggested that you might be able to share the data in a month or two. Thus, I am hoping to take you up on your offer to share the data.

Tuesday's response from Shepherd:
I'm happy to send it. I have the most recent dataset on my work computer, not here. So I'll have to send it when I'm back at the office tomorrow or Thursday.

Were you still planning on sending those data?

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Replicability: www.nber.org/~jwolfers

Donohue and Wolfers (2005)

Uses and Abuses of Empirical Evidence in the Death Penalty Debate
by John J. Donohue and Justin Wolfers
Stanford Law Review (2005) 58:791-846

Brief Description of the Data

- National time series of execution and homicide rates in the U.S.
  - Stata 9 data, Figure 1 do file
- Figure 2: National time series of homicide rates in Canada and the U.S.
  - Excel spreadsheet and Figure 2
- Homicide rates by state, 1960-2000 and coding of death penalty statutes
  - Stata 9 data, Table 1 do file, Figure 3 do file
    - Includes attempt to replicate Dezbakhsh and Shepherd (2006) Tables 5 and 6
- State-level homicide and execution data plus controls, 1934-2000
  - Stata 9 data, Table 2 do file, Table 3 do file, Figure 4 do file, Table 5 do file, Figure 8 do file
    - Includes attempt to replicate Dezbakhsh and Shepherd (2006) Table 8
  - Table 4 do file
    - Includes replication of Katz, Levitt and Shustorovich (2003) Table 2
- State-level homicide and execution data plus controls, 1977-1997
  - Data are available from Naci Mocan
  - Table 6 do file
    - Includes replication of Mocan and Gittings (2003) Table 2
- Monthly homicide data in Illinois and the US (seasonally-adjusted) 1994-2003
  - Stata 9 data, Figure 5 do file
    - Includes replication and re-analysis of Cloninger and Marchesini (2005)
- Monthly homicide data in Texas and the US (seasonally-adjusted) 1989-1998
  - Stata 9 data, Figure 6 do file
    - Includes replication and re-analysis of Cloninger and Marchesini (2001)
- County-level homicide and execution data plus controls, 1977-1996
  - Stata 9 data, Table 7 do file, Table 8 do file, Table 9 do file, Figure 7 do file
    - Includes replication and re-analysis of Dezbakhsh, Rubin and Shepherd (2003)
- Meta-analysis of published results
  - Stata 9 data, Figure 9 do file, Figure 10 do file
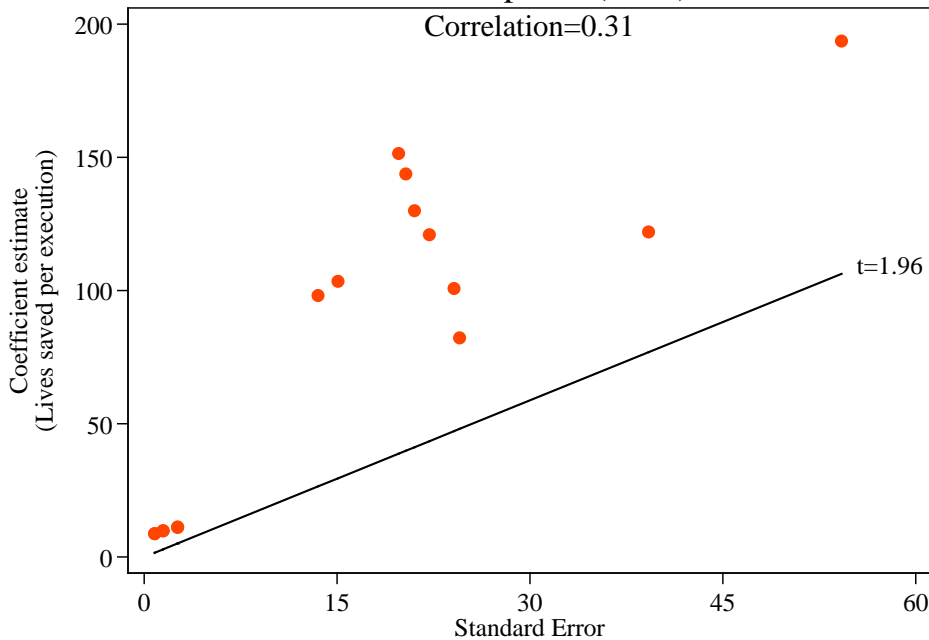
All of the Donohue and Wolfers data in one zip file.
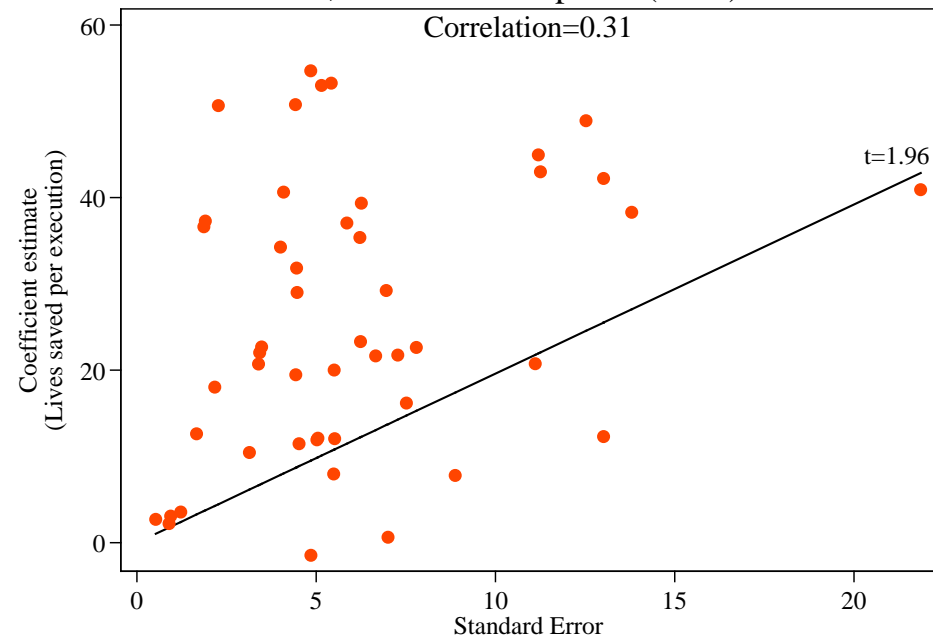(Mocan and Gittings' data are excluded, but are available here)

Selective reporting of results

❑ "our replication of their work shows that, contrary to the norms of sensitivity analysis, their reporting of the key model estimates is highly selective, favoring results that show 'no deterrence.'" [page 3]

❑ This is an **empirically testable** claim

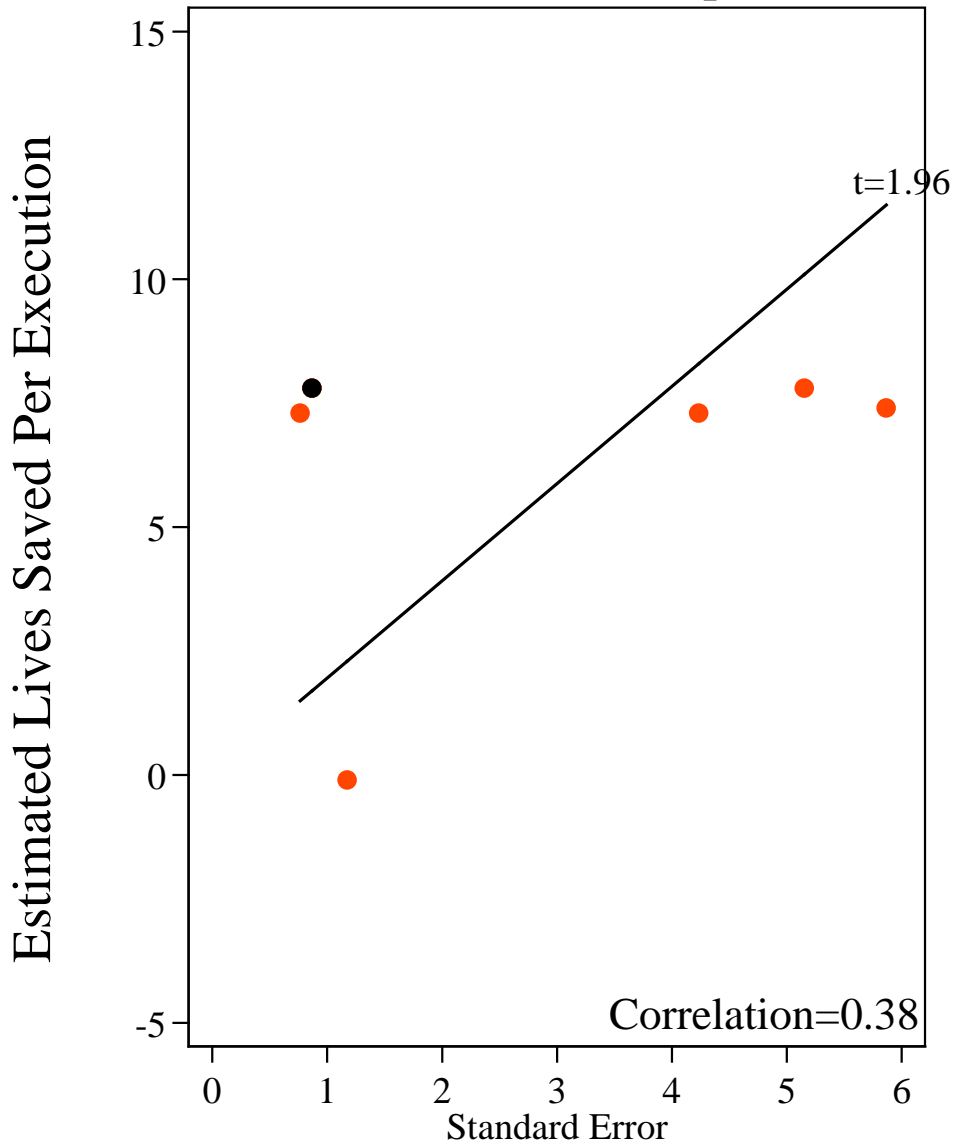Dezbakhsh and Shepherd (2006) Estimates
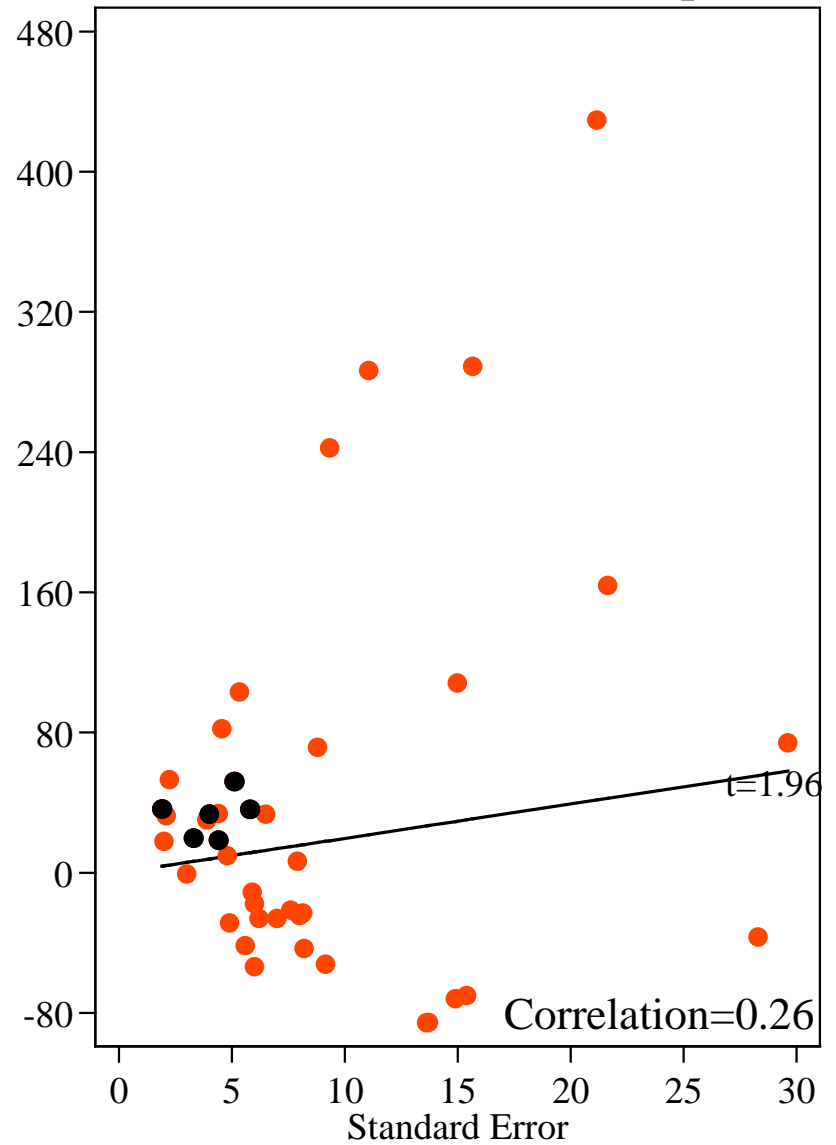
Dezbakhsh, Rubin and Shepherd (2003) Estimates

Donohue and Wolfers' Sensitivity Analysis

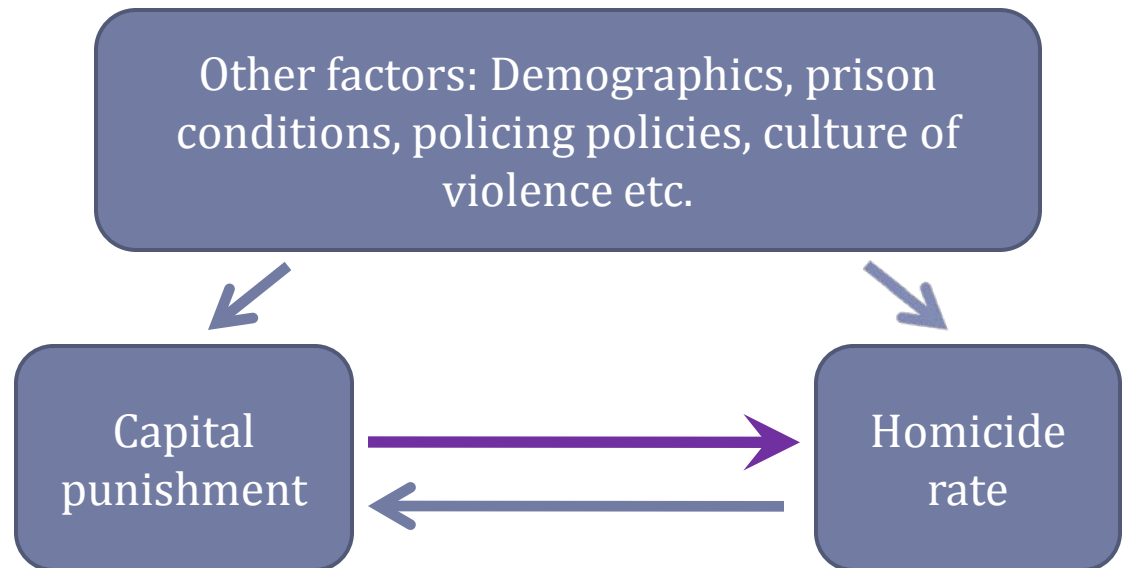### Dezbakhsh and Shepherd

Dezbakhsh, Rubin and Shepherd

Estimated Lives Saved Per Execution

Standard Error

t=1.96

Correlation=0.38

Correlation=0.26

Key Points

❑ Understanding their two key points:

  ‣ Replication

  ‣ Sensitivity analysis

❑ **Understanding Donohue and Wolfers' critique**

  ‣ Instrument validity

  ‣ Statistical precision

  ‣ Value of transparent approaches

Understanding Instrumental Variables

Other factors: Demographics, prison conditions, policing policies, culture of violence etc.

Capital punishment

Homicide rate
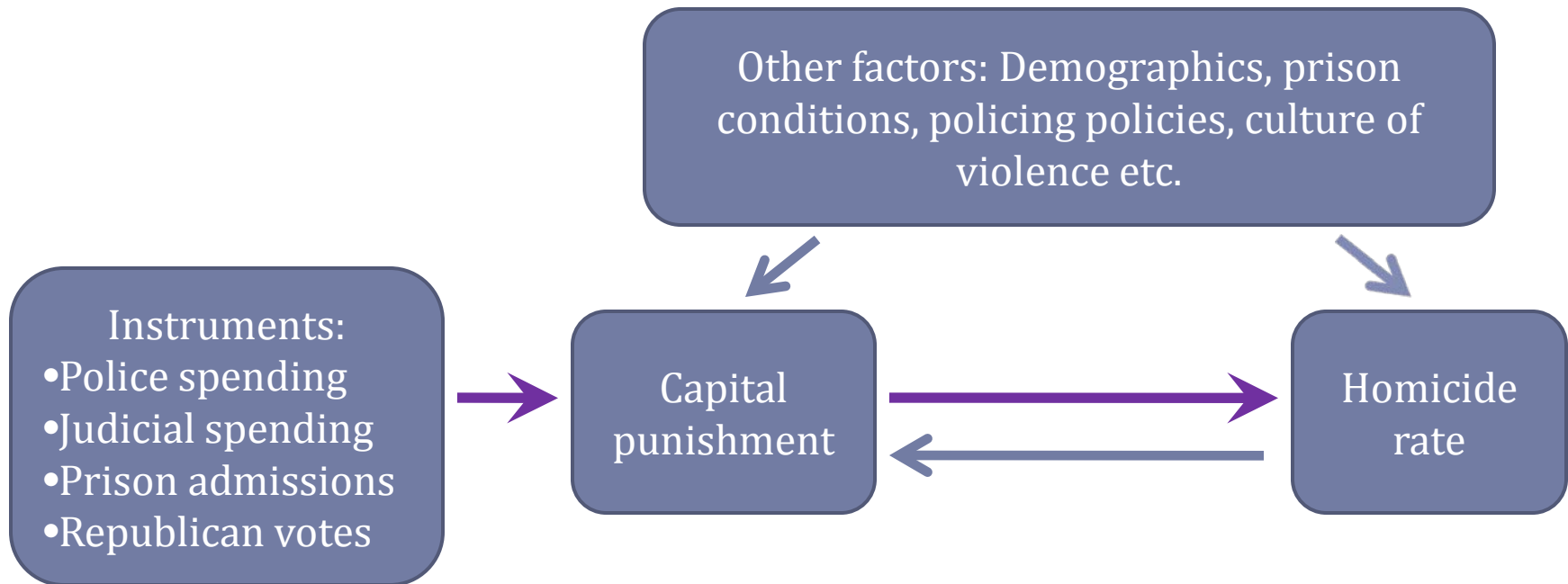
Understanding Instrumental Variables

Two requirements:
1. IV's cause capital punishment
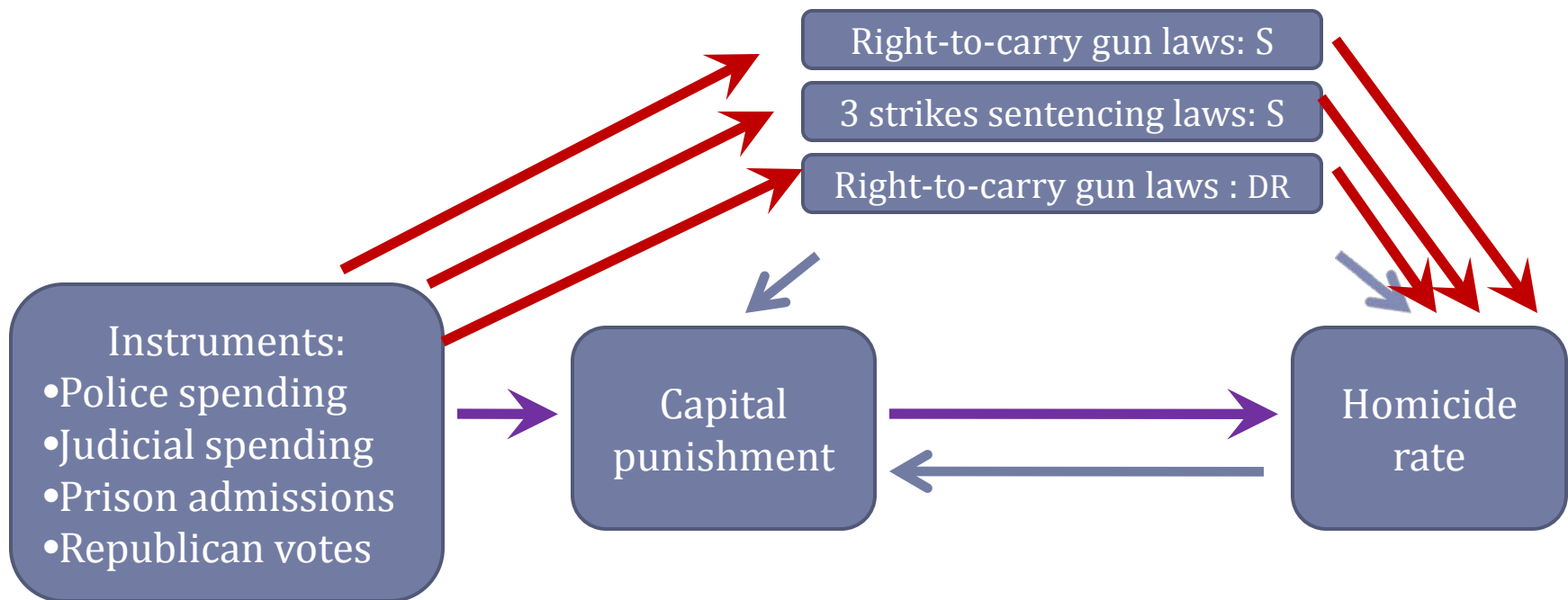2. And have no other path of influence on homicide rates

Understanding Instrumental Variables

Two requirements:
1. IV's cause capital punishment
2. And have no other path of influence on homicide rates

"Most of our instrumental variables have been used in numerous empirical papers because previous researchers believed (often based on empirical testing) that the instruments were as uncorrelated with crime rates as one was likely to find." –Paul Rubin (2007)

Right-to-carry gun laws: S

3 strikes sentencing laws: S

Right-to-carry gun laws : DR

Instruments:
• Police spending
• Judicial spending
• Prison admissions
• Republican votes

Capital punishment

Homicide rate

Do the instruments "work"?

- *"We measure the partisan influence by the Republican presidential candidate's percentage of statewide vote in the most recent election."*

- *"This instrument is intended to capture any political pressure to get tough with criminals, a message popular with Republican candidates."*
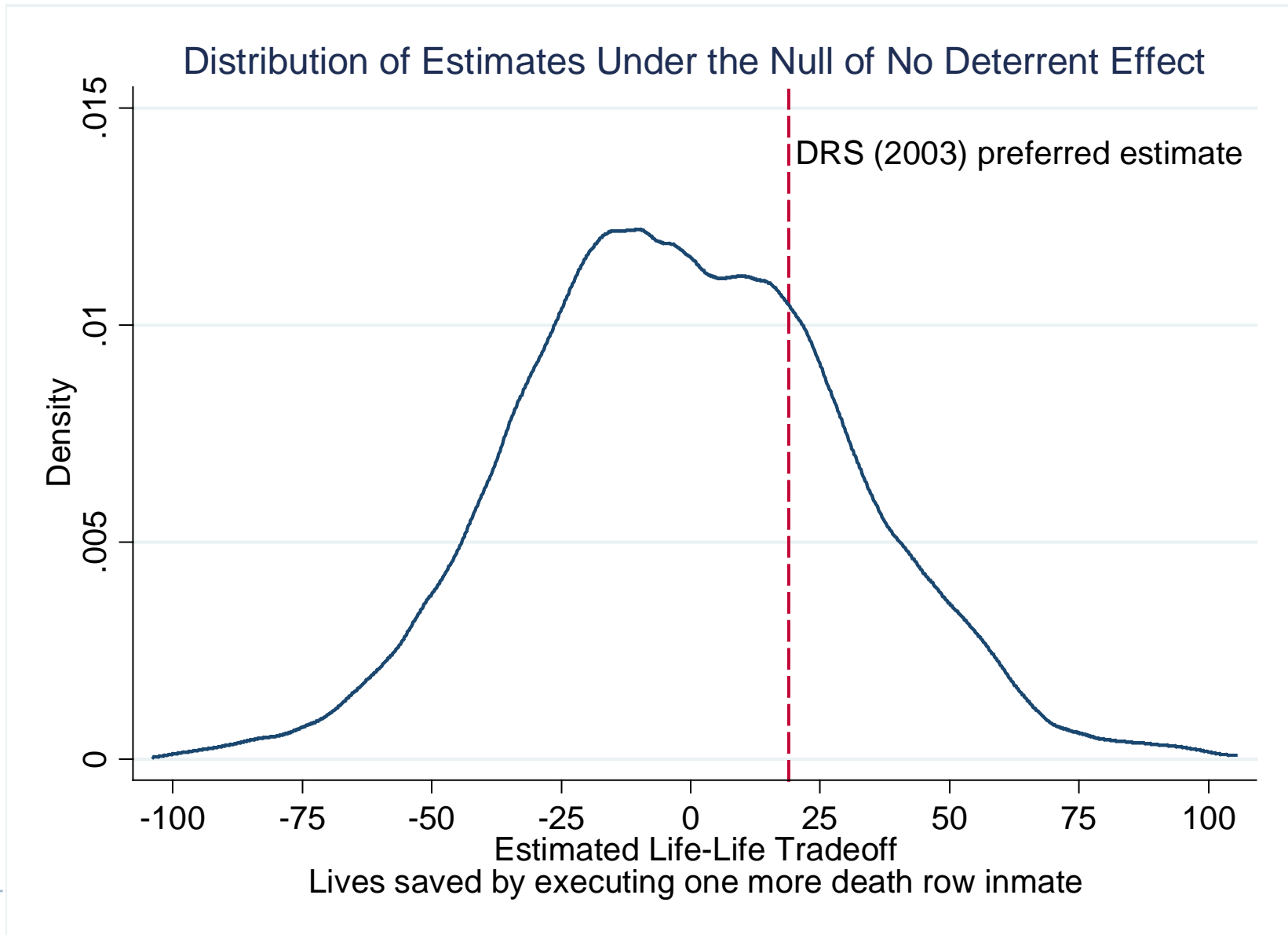
Instrumental variable	Net effect on homicide
Police spending	+0.08
Judicial spending	+0.58
Prison admissions	-0.04
Ford's vote share	+0.08
Reagan's vote share (1st term)	-0.45
Reagan's vote share (2nd term)	+0.54
Bush's vote share (1st term)	+0.41
Bush's vote share (2nd term)	-0.45
Dole' vote share	-0.77

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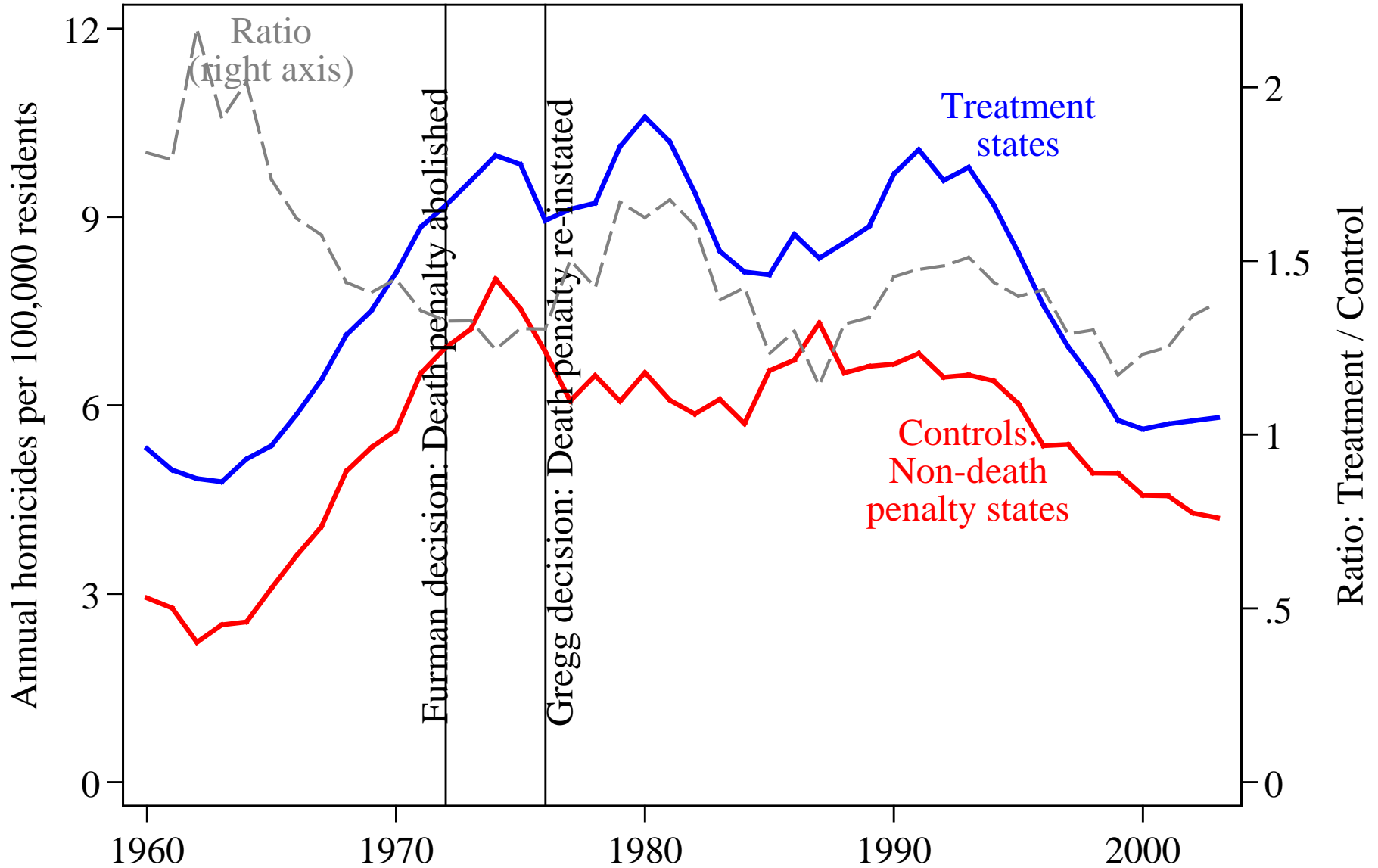
▶ Value of transparent approaches

Randomization Test

Distribution of Estimates Under the Null of No Deterrent Effect

DRS (2003) preferred estimate

Density

Estimated Life-Life Tradeoff
Lives saved by executing one more death row inmate

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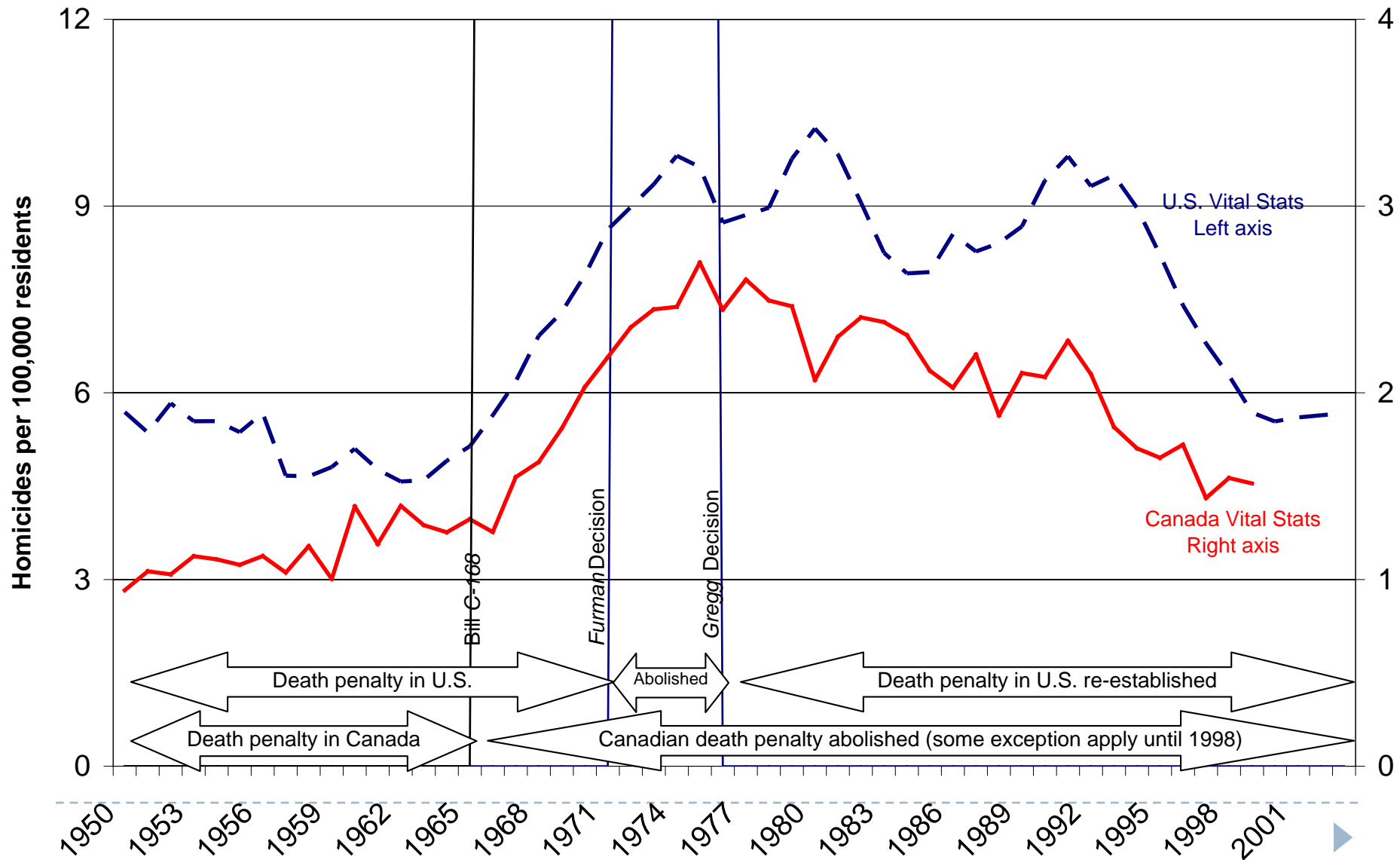
Homicide Rates in the United States

Non-death penalty states are those without a death penalty throughout 1960-2000:
AK HI ME MI MN WI

Canada v. United States

Homicide Rates and the Death Penalty in the U.S. and Canada

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❑ Conclusion: A lot of sound and fury

▸ But does it respond to the Donohue and Wolfers critique?