The Social Cost of Carbon

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The Social Cost of Carbon (SCC)

"The most important number you've never heard of."

"The most important single economic concept in the economics of climate change."

The "holy grail of climate economic analysis."

"The one number that rules them all, the one number that every government across the globe should use."

SCC has two distinct economic uses. My focus here is cost-benefit analysis.

The Social Cost of Carbon (SCC) is somewhat misnamed.

> The social cost of carbon (SC-CO_2) is an economic metric intended to provide a comprehensive estimate of the net damages—that is, the monetized value of the net impacts, both negative and positive—from the global climate change that results from a small (1 metric ton) increase in carbon dioxide (CO_2) emissions.

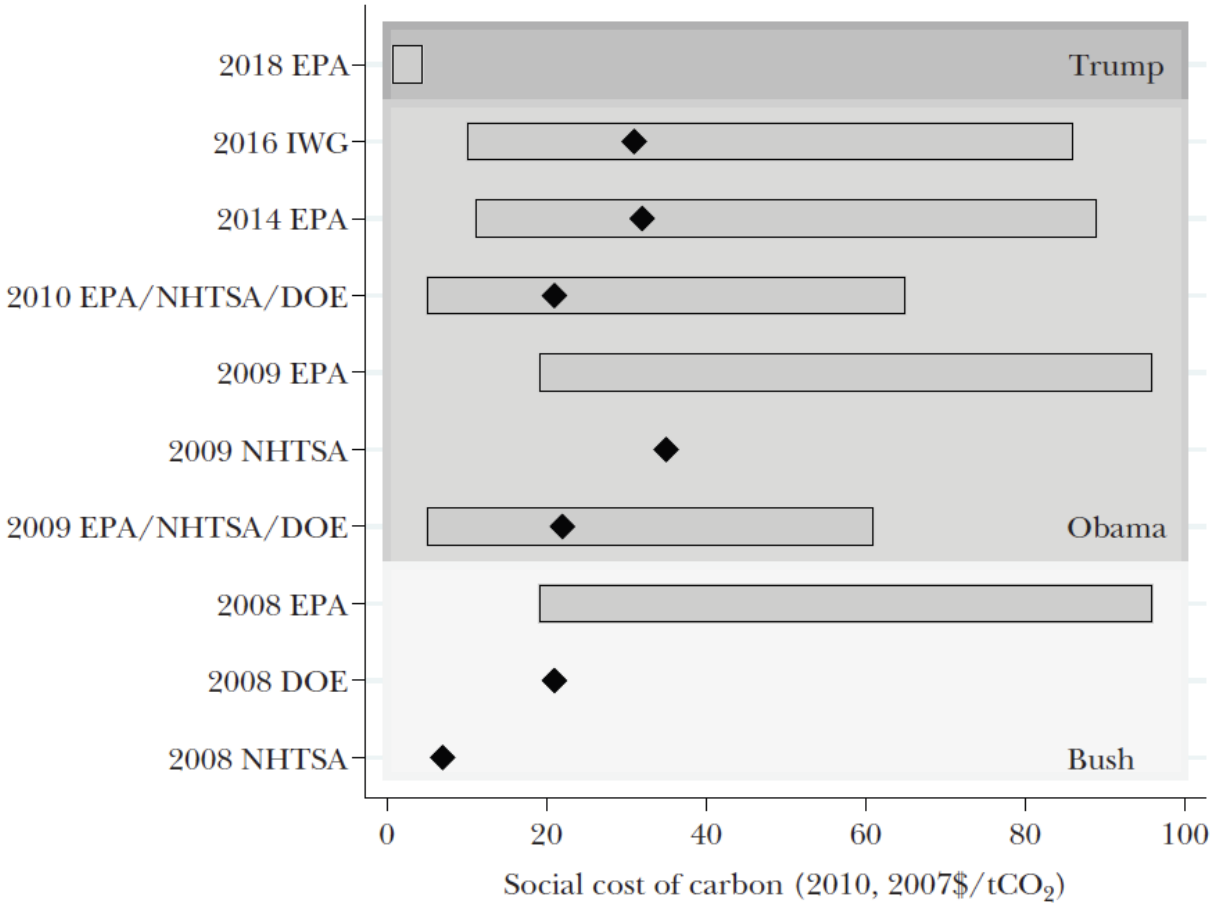
— National Academies of Sciences, Engineering, and Medicine (2017)

Source: National Academies of Sciences, Engineering, and Medicine, "Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide" (2017).

A Brief History

- Massachusetts vs. EPA (SCOTUS 2007)
- Center for Biological Diversity vs. NHTSA (9th Cir. 2008)
  - → "value of carbon emissions is certainly not zero"
- First federal SCCs: Bush administration NHTSA, DOE, EPA
- Obama establishes Interagency Working Group on SCC (IWG)
  - → First IWG estimates in 2010
  - → Updated in 2013, 2015, 2016
- Trump disbands IWG, significantly reduces federal SCC (March 2017)
- Biden reinstates IWG and final Obama SCC estimates (adjusted for inflation) (Feb 2021)
- EPA issues its own SCC estimates (Nov. 2023)

US SCC Over Time



- Biden interim estimates: \$14 – \$152 (no central estimate)
- EPA 2023 estimates: \$120 – \$340 (\$190 as central estimate)

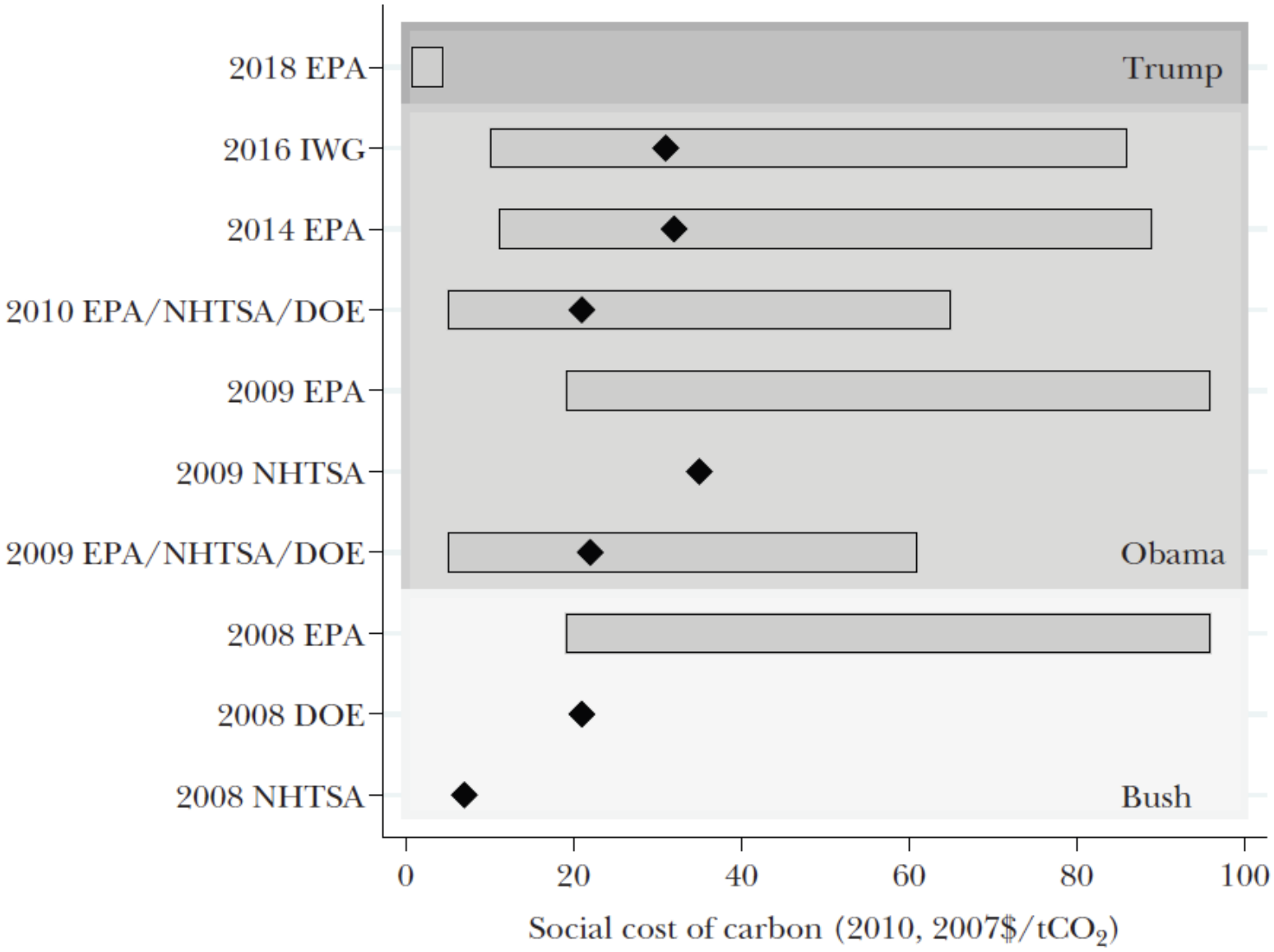
Source: Maximilian Auffhammer, "Quantifying Economic Damages from Climate Change," *Journal of Economic Perspectives* 32(4) (2018), p. 35.

Ethics (and law)

Trump's very low estimate reflects two ethically relevant changes to Obama-era assumptions:

1. Incorporated *domestic* climate damages only
2. Used higher *discount rates*
   - → Obama/Biden IWGs: 2.5, 3, and 5 percent
   - → Trump: 3 and 7 percent

Ethics (and law)



Ethics (and law)

Three assumptions underlying EPA's 2023 estimates:

1. *All* damages should be included
2. Lower discount rates:
   - → 1.5, 2, and 2.5 percent
3. Geographically-variable (dis)value of deaths
   - → Death in US: $10,050,000
   - → Death in Dem. Rep. of Congo: $174,420
   - → Hence: 1 US death is equivalent to 57.6 deaths in the D.R.C.