Conservation impact evaluation using remotely sensed data

UCSB ECON 290

Alberto Garcia and Robert Heilmayr
June 11, 2021

Motivation

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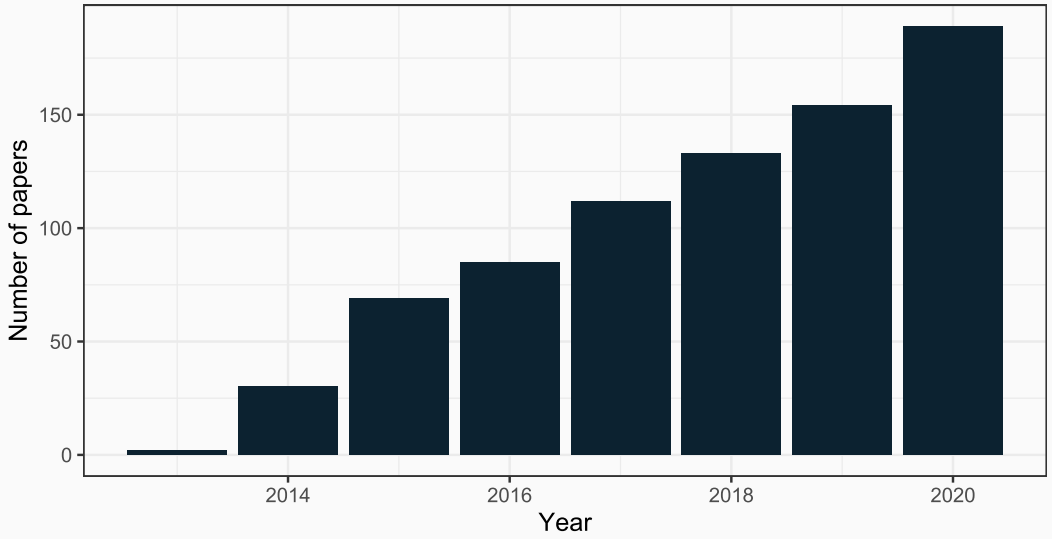
Papers using econometric methods† that cite Hansen et al., 2013



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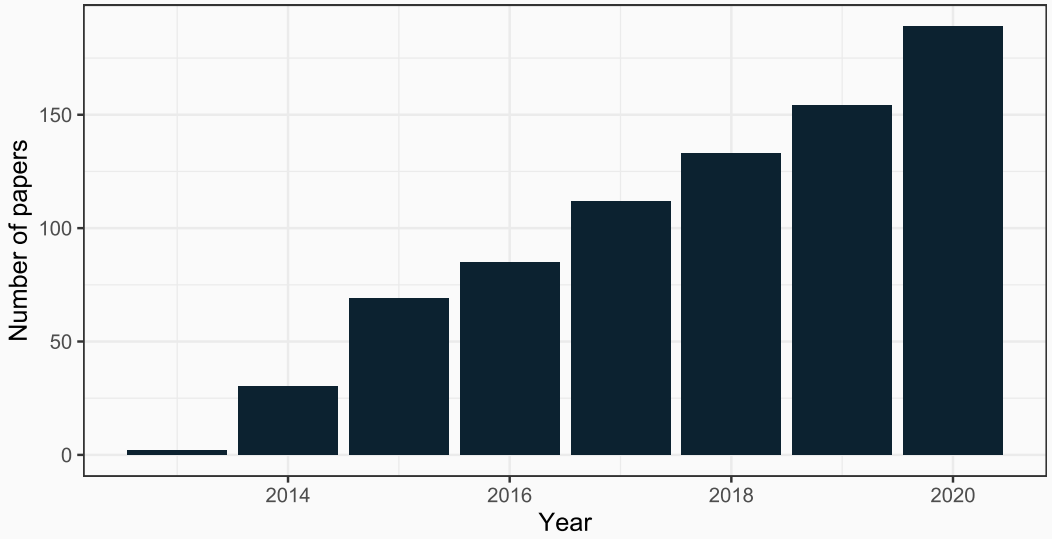

Data characteristics

- Wall to wall data
- Fine spatial scales
- Relatively long time series

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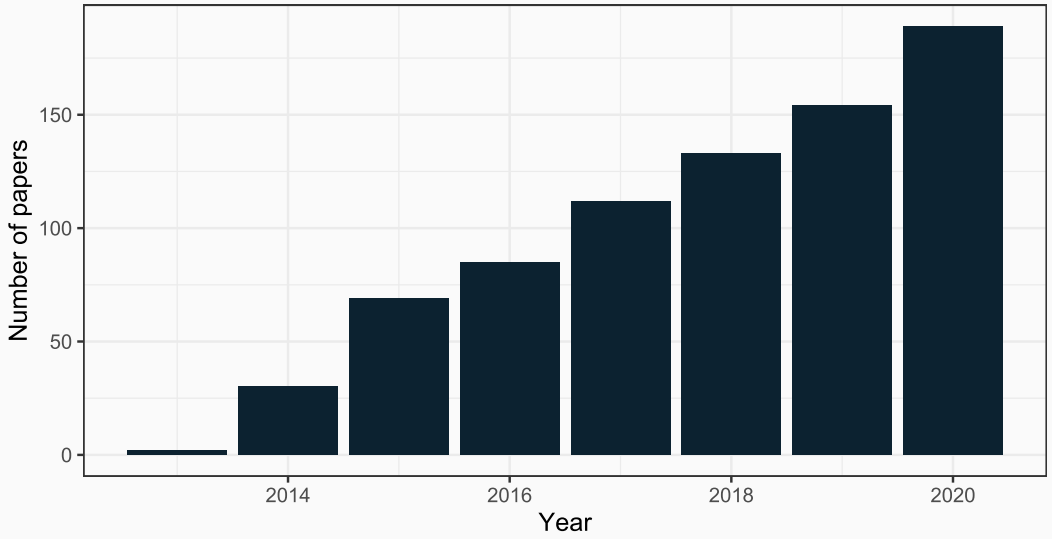

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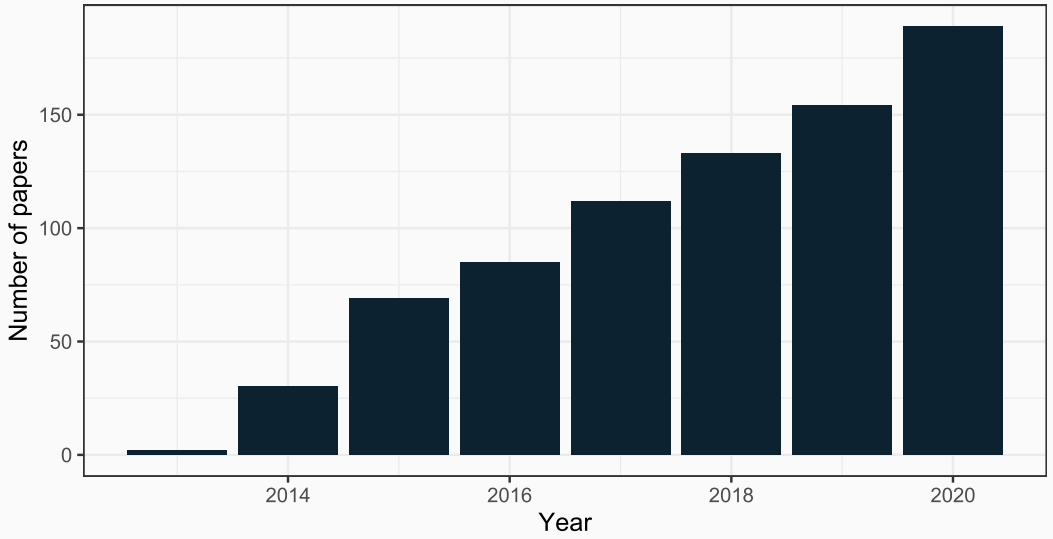

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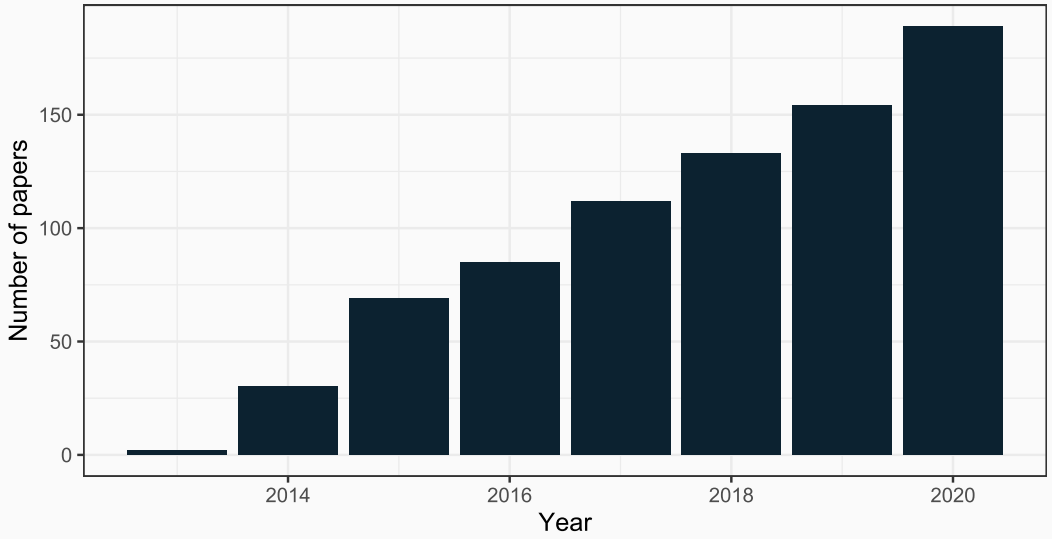

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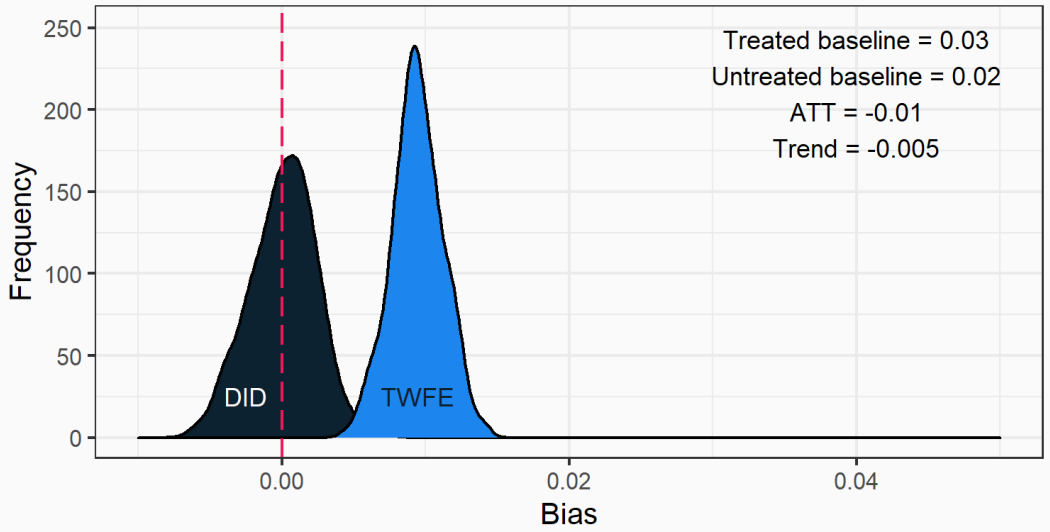
Do traditional econometric models generate unbiased estimates in this setting?

- Importance of scale (Avelino et al., 2016)
- Nonclassical measurement error (Jain, 2020; Alix-Garcia and Millimet, 2020)

Results

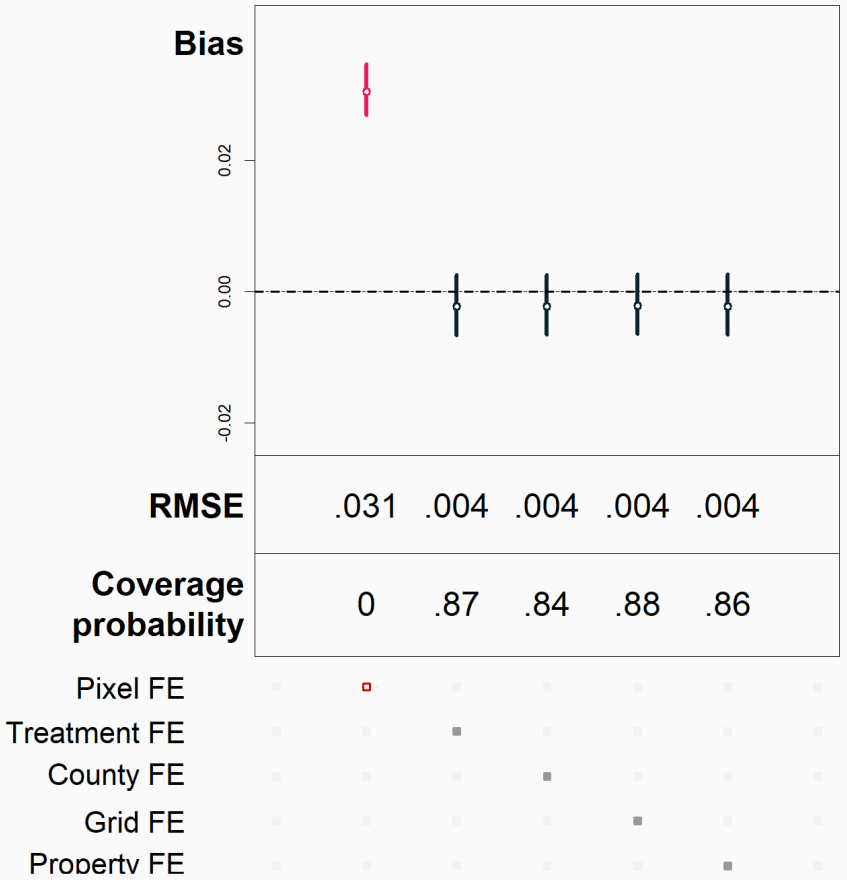
Commonly used and suggested "robust" specification cannot identify ATT:

$$defor_{i,t} = \beta D_{i,t} + \gamma_i + \alpha_t + u_{i,t}$$



Aggregation as a solution

Aggregated fixed effects



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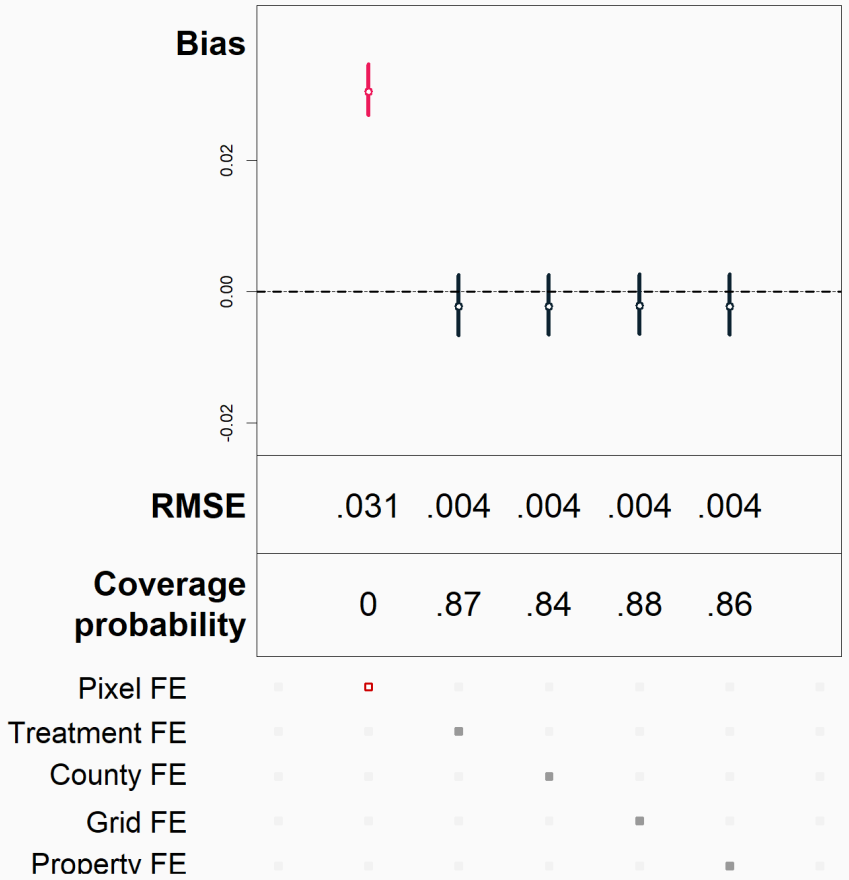
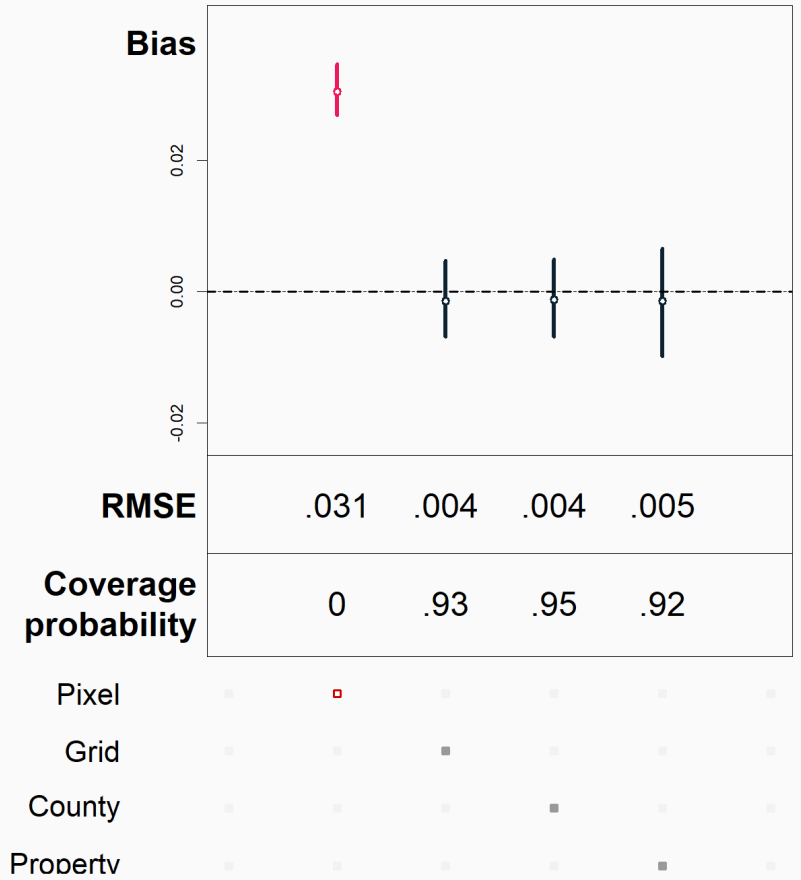


Aggregated units of observation



Benefits of property-level models ($\sigma_p = 0.3$)

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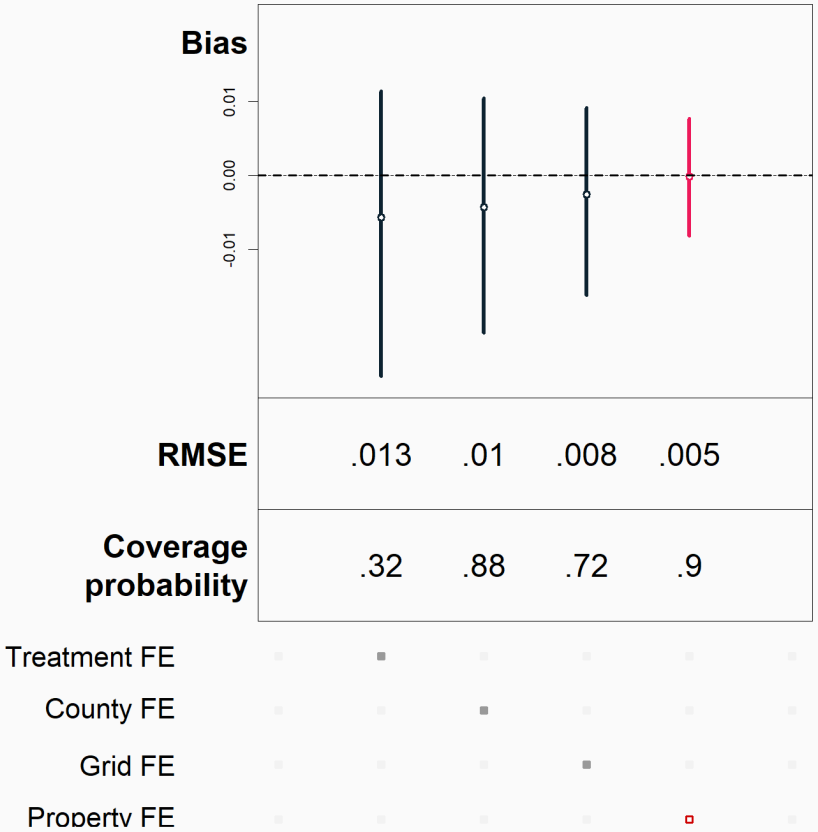

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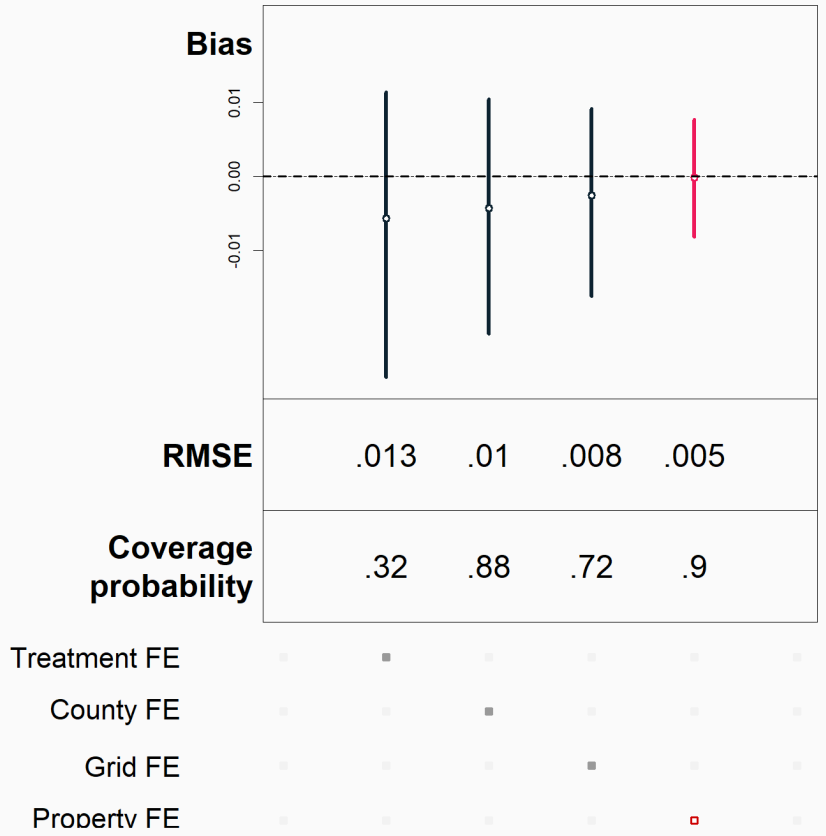
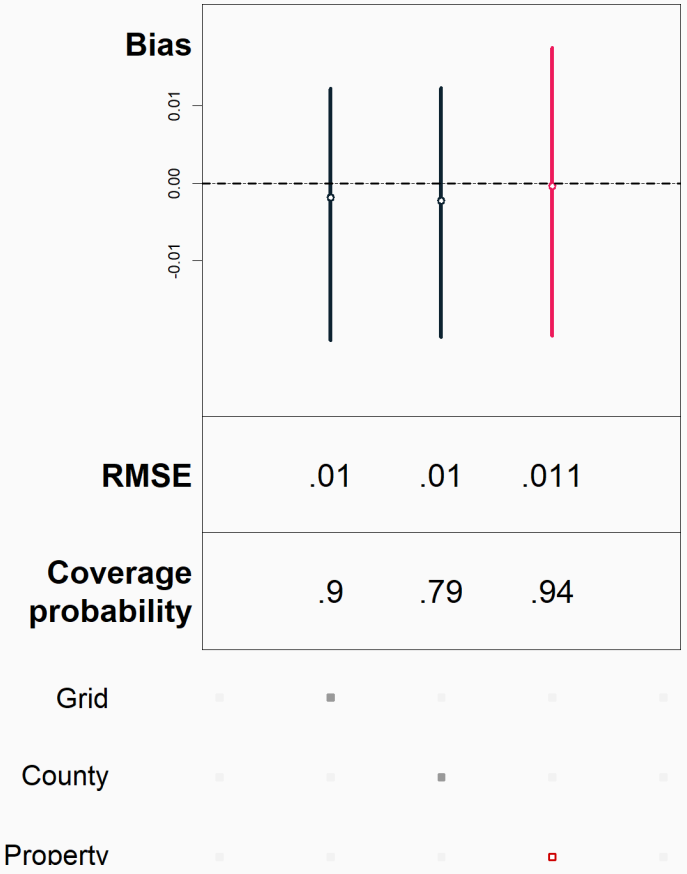


Aggregated units of analysis



Bias in TWFE model

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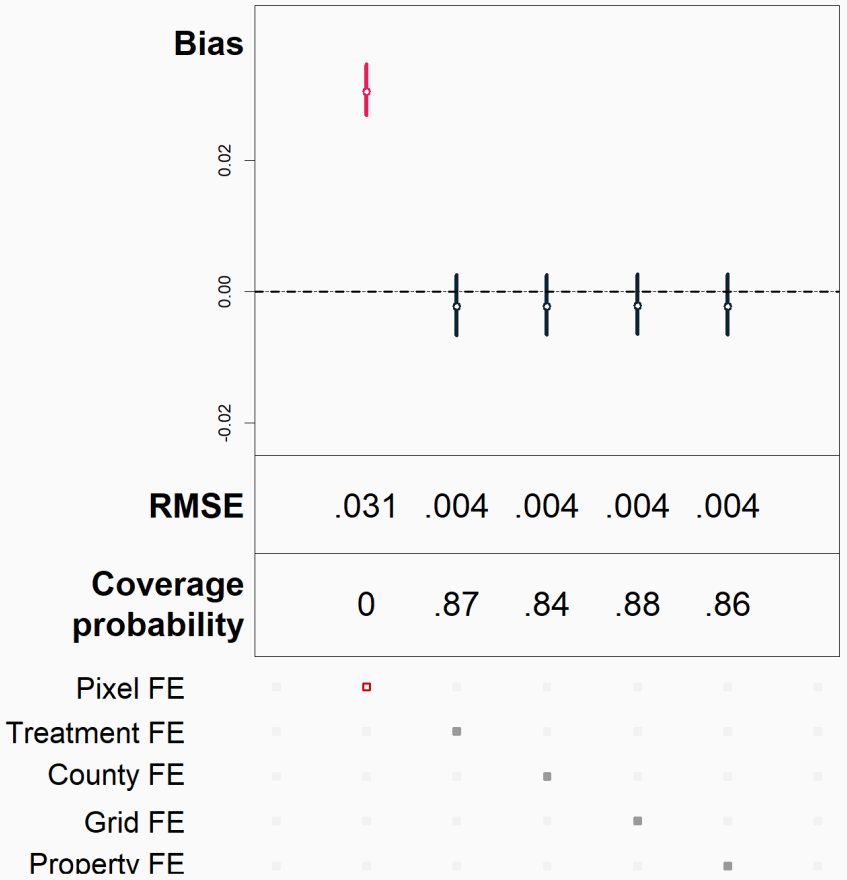

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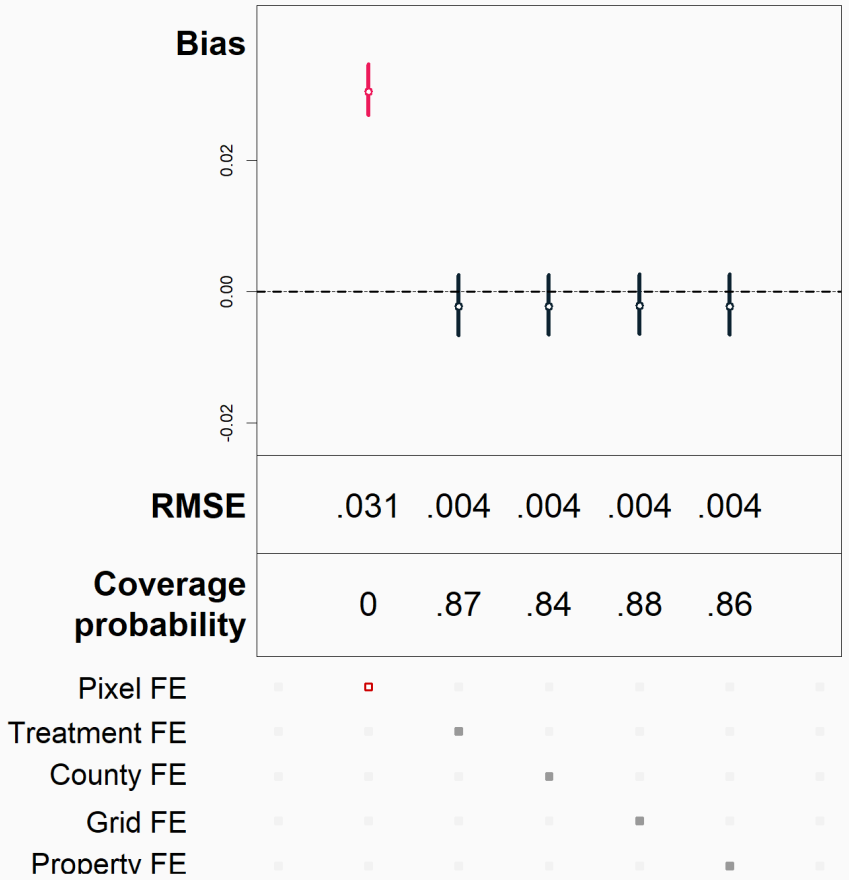

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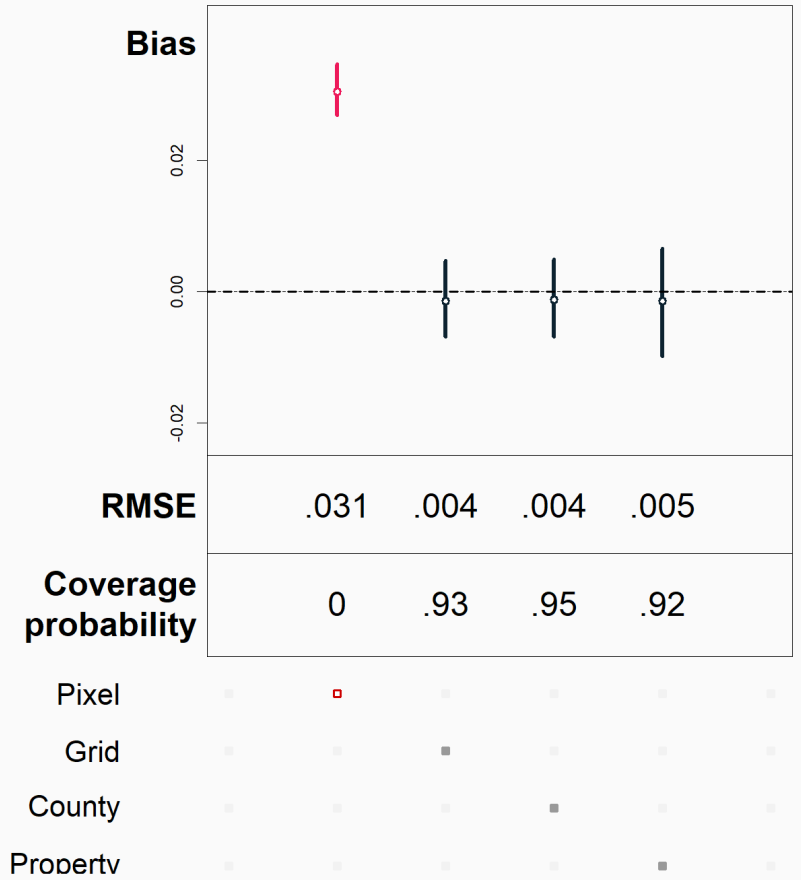
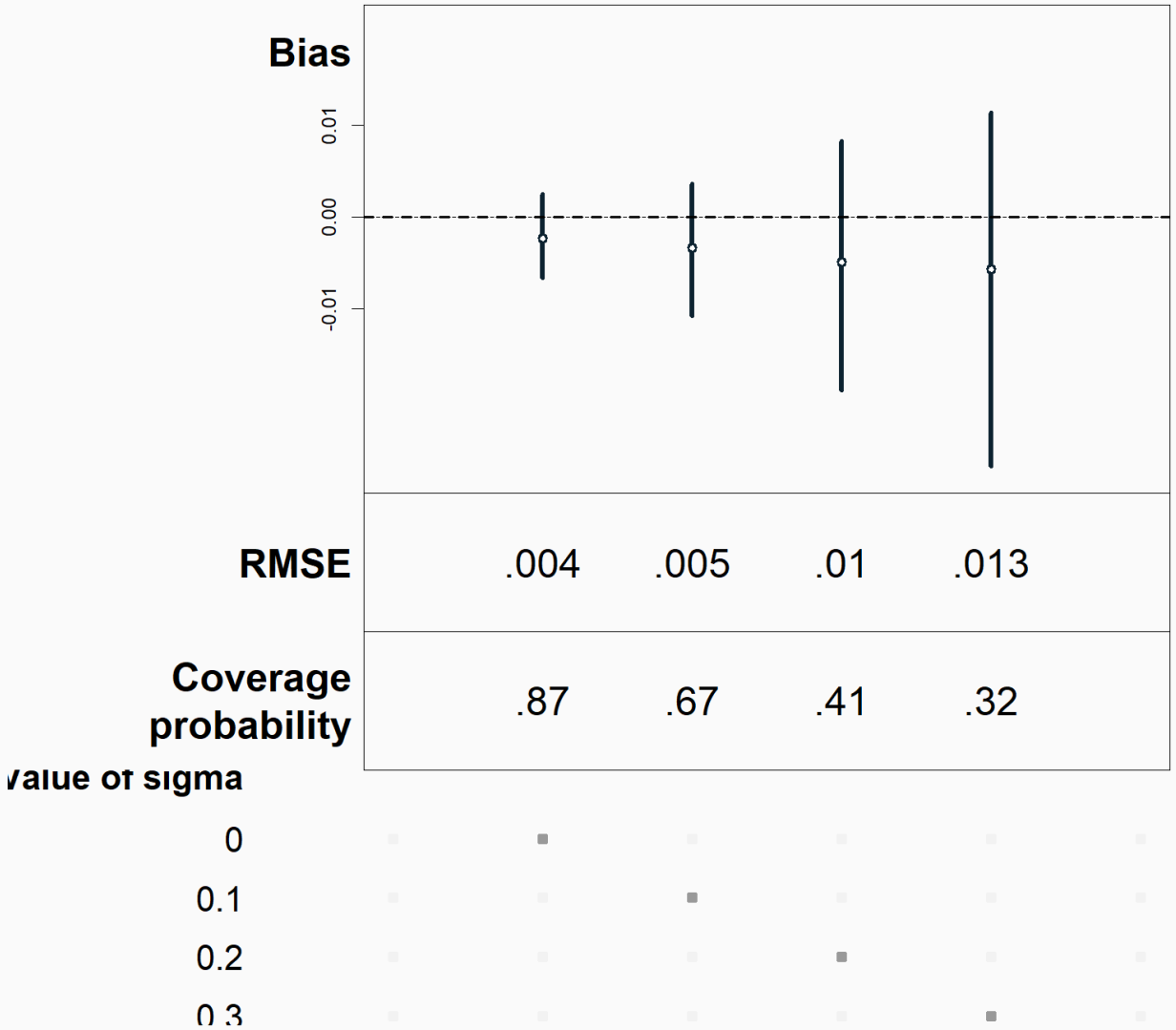


Impacts of property-level disturbances on DID



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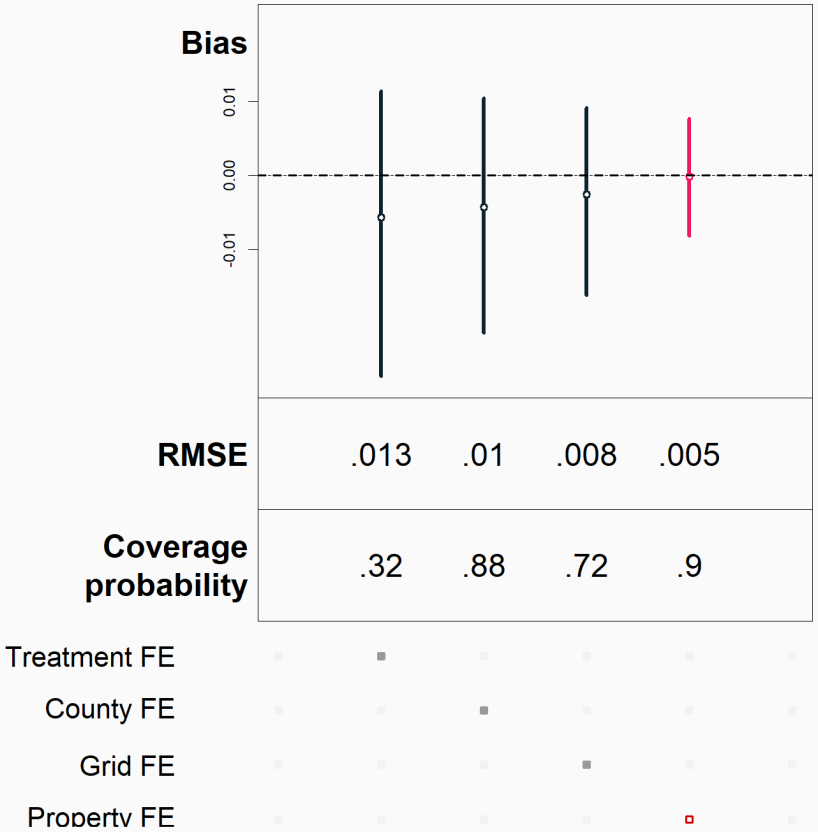

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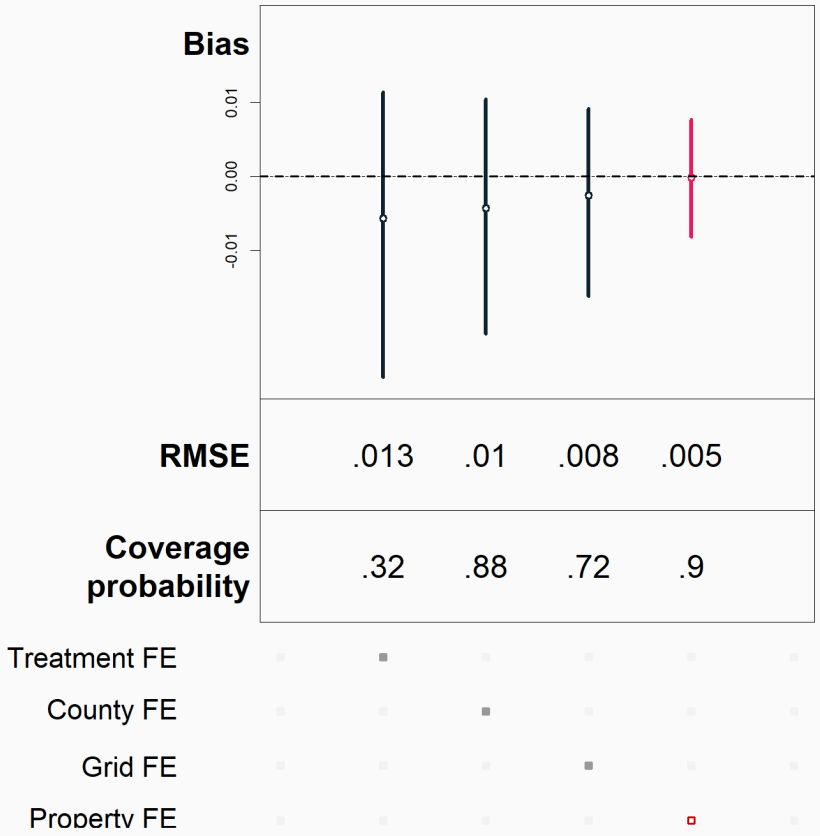

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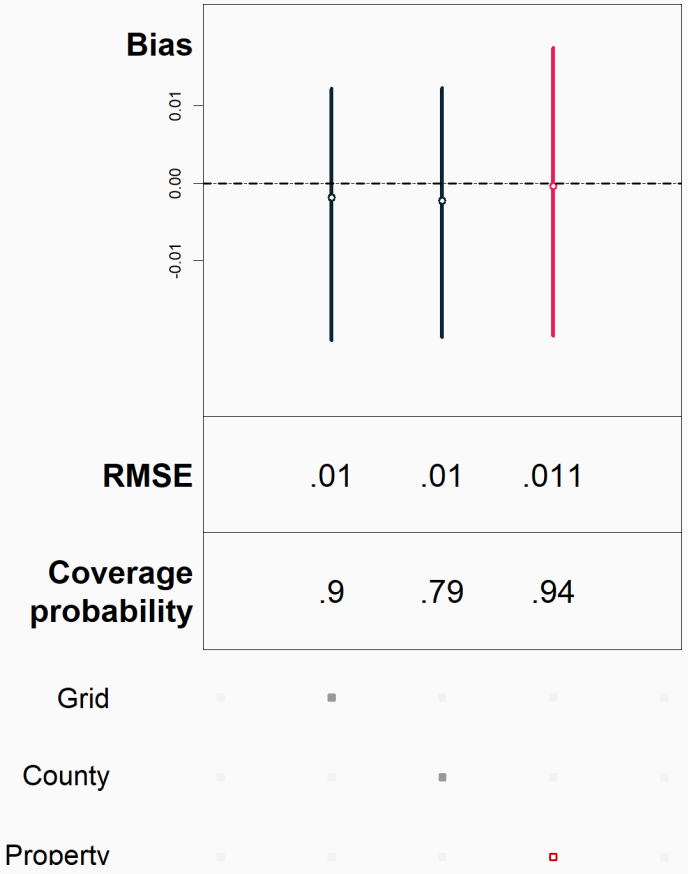

Thanks!

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