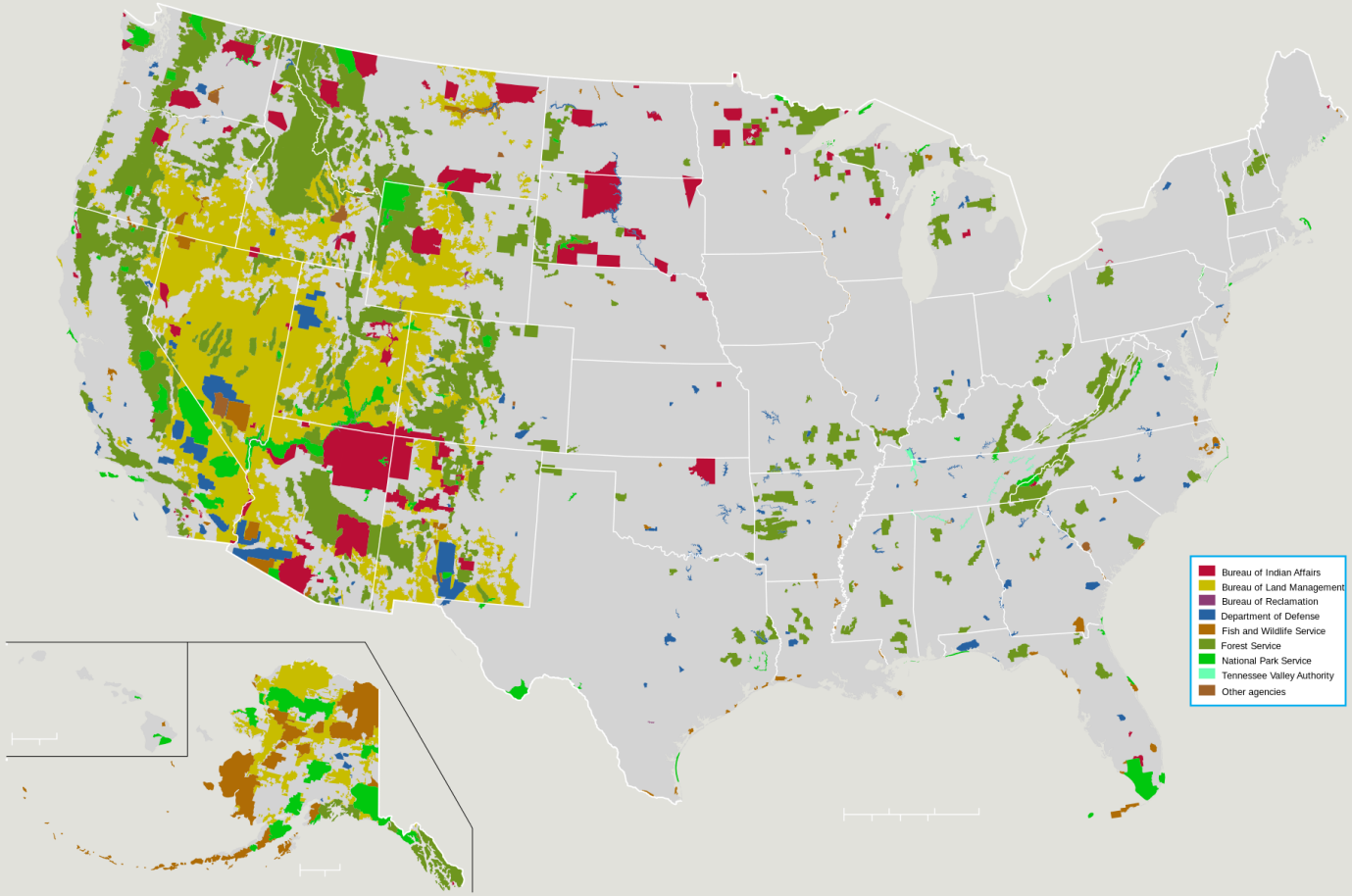


Can Evidence of a Public Lands Burden be Found?

Public lands, local governments and tax policy in the American West

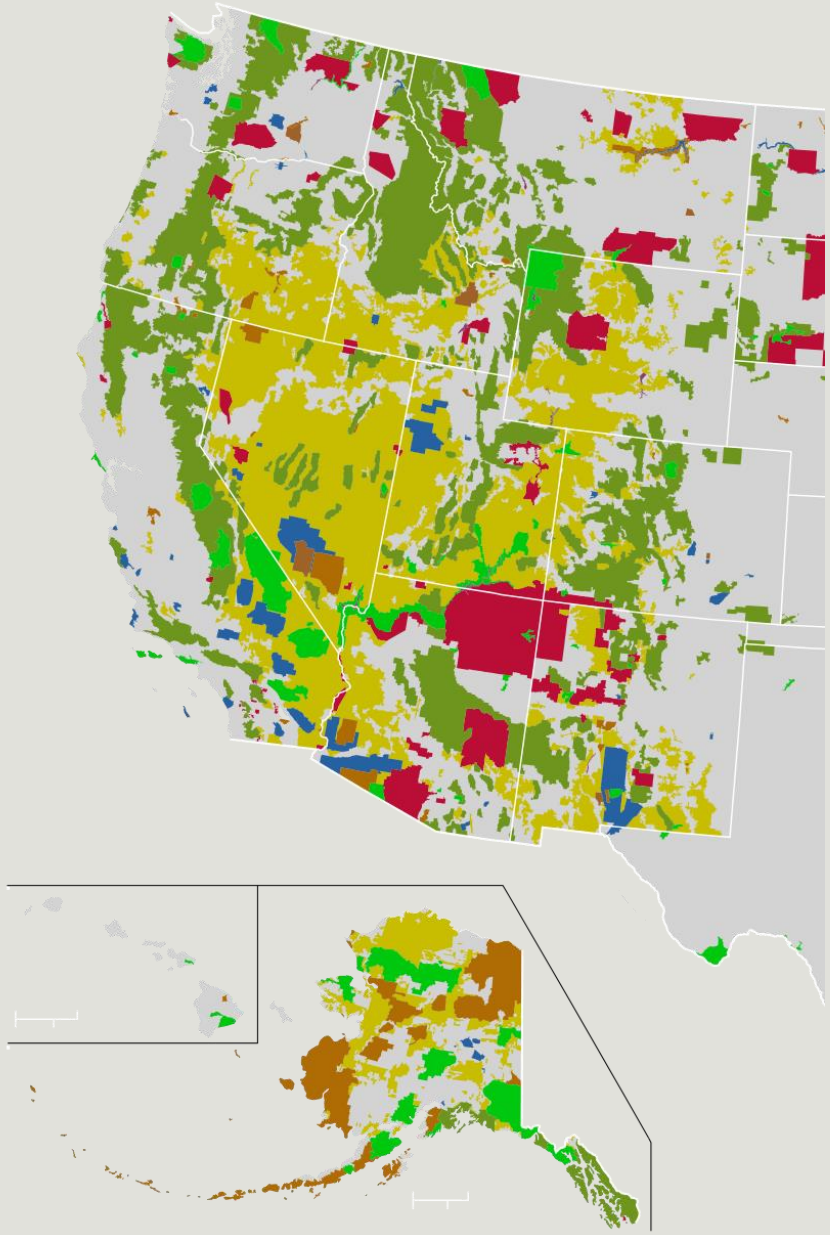
1/3 of land base is federally owned affecting **> 1,600** counties (62%)

403 of 415 counties in the West contain lands owned and managed by the 4 primary land management agencies

20+ programs exist to compensate states and counties for the presence of federal lands

Compensation programs are funded by revenues generated from

- mineral leasing,
- off-shore leasing,
- grazing,
- timber,
- recreation special uses, etc. OR
- appropriated monies from Congress



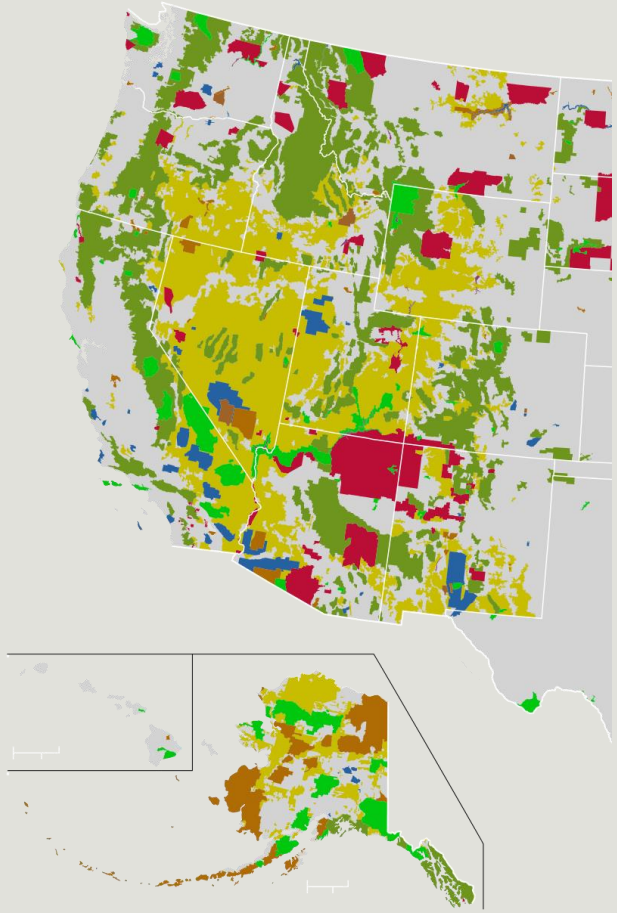
Counties and Public Goods

Counties (and states) have argued since the creation of the first forest reserves that public lands present specific burdens:

- Reduced own-source tax revenue
- Imposed service burdens (roads, public safety)
- “Opportunity costs” of private ownership: secondary benefits

When the first revenue sharing programs were created, counties were primarily responsible for providing public goods related to roads and schools (ACIR 1978)

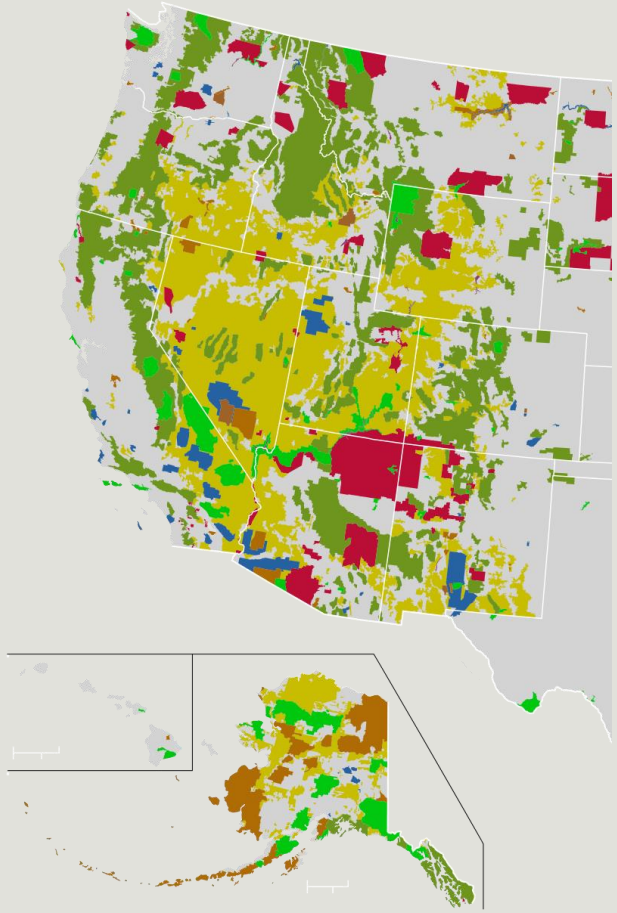
Thus, the majority of dollars paid to states and counties are designed to compensate for the loss of own-source tax revenue and many are specifically earmarked for these two uses



On the Impact of Public Lands & County Payments

"The economic 'burdens' argument - the assertion that the federal lands constitute an economic burden on the localities in which they are located--is institutionalized in the Act of 1976 (PILT), in spite of the fact that it has absolutely no empirical support. Nevertheless, it continues to be a standard part of the state and local repertoire in public lands debates" (Cowart and Fairfax 1988)

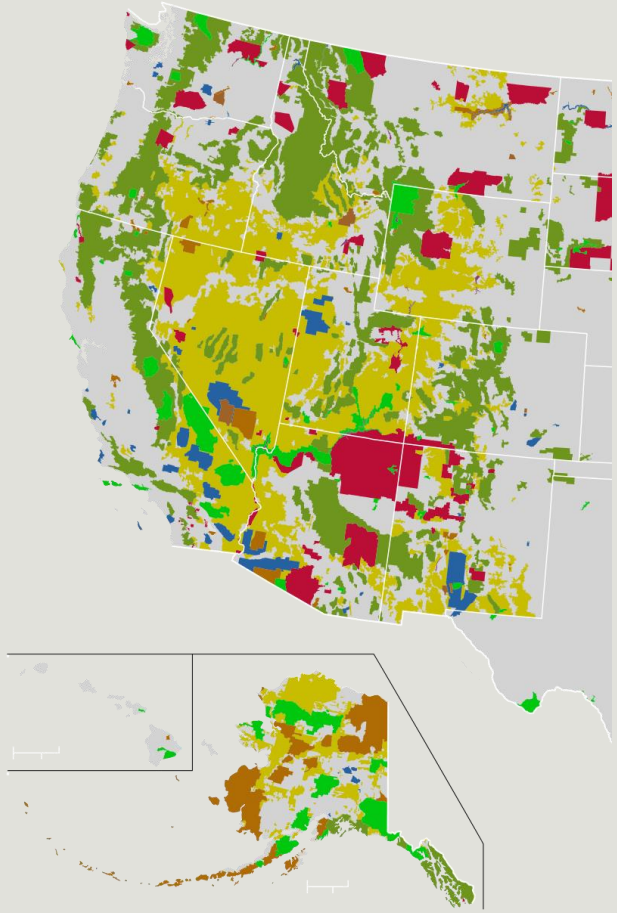
"expansion of federal control over federal lands has been accompanied by increases in funds to western states. The revenue shares start to look like…the necessary spoonful of sugar that made major changes in lands policy more palatable in western states" (Fairfax 1987)



Fairfax, Sally K. 1987. "Interstate Bargaining over Revenue Sharing and Payments in Lieu of Taxes: Federalism as If States Mattered." In Federal Lands Policy, edited by Phillip O. Foss, 77– 90. Westport, Connecticut: Greenwood Press.
Cowart, Richard H, and Sally K Fairfax. 1988. "Public Lands Federalism: Judicial Theory and Administrative Reality." *Ecology Law Quarterly* 15: 375–473.

Previous research

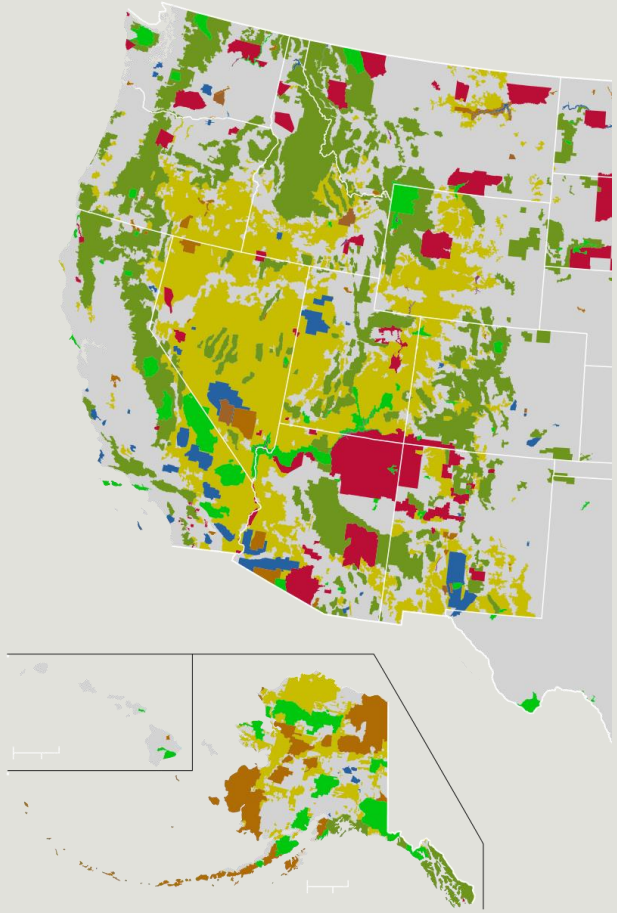
1. **Impact of public lands (and policy) on county government finances**
   - Small-scale studies in the 1970s (Barron and Jansma 1970; Hendricks and Headley 1979)
   - Nation-wide study by the Advisory Commission on Intergovernmental Relations (1978)
   - The impact of local allocations of PILT payments on local government finances (Dorf et al. 1981)
   - Study of Oregon Counties (Goldner and O'Neil, unpublished masters thesis, 2011)
2. **Tax-equivalency studies**
   - Williams (1955)
   - Schuster et al. (1999)
3. **Impact of public lands on economic performance**
   - Employment diversity and economic performance - Ashton and Pickens (1995)
   - Employment growth and net migration - Lewis, Hunt and Plantinga (2002)
   - Weber and Chen (2011)
   - Economic prosperity - Rasker, Gude and Delorey (2013)
   - Population and employment - Pugliese, McCann and Artz (2015)



1978 ACIR Study

"The Adequacy of Federal Compensation to Local Governments for Tax Exempt Federal Lands"

- Methods: Comparative county approach (public land county group: 1,529 counties; private land county control group: 800 counties)
- Public lands counties are virtually indistinguishable from other counties on measures of per capita property tax burdens, own-source revenue per capita, tax effort, and per capita expenditures of all types
- However, counties with > 15% public land were found to display weak evidence of burdens on the above measures, but the group was considered too small to be significant and differences were attributed to functions of those specific counties, not public lands.
- Notably, the commission also argued that:
  - States were the appropriate recipients of payments, not counties
  - Earmarking for roads and schools was a relic of county government structure in early 20th century and should be removed
  - Congress should authorize federal agencies to make additional payments in cases where federal government acquires previously private lands and where land management practices change significantly resulting in severe (>50%) reductions in payments (i.e. owl payments and SRS)



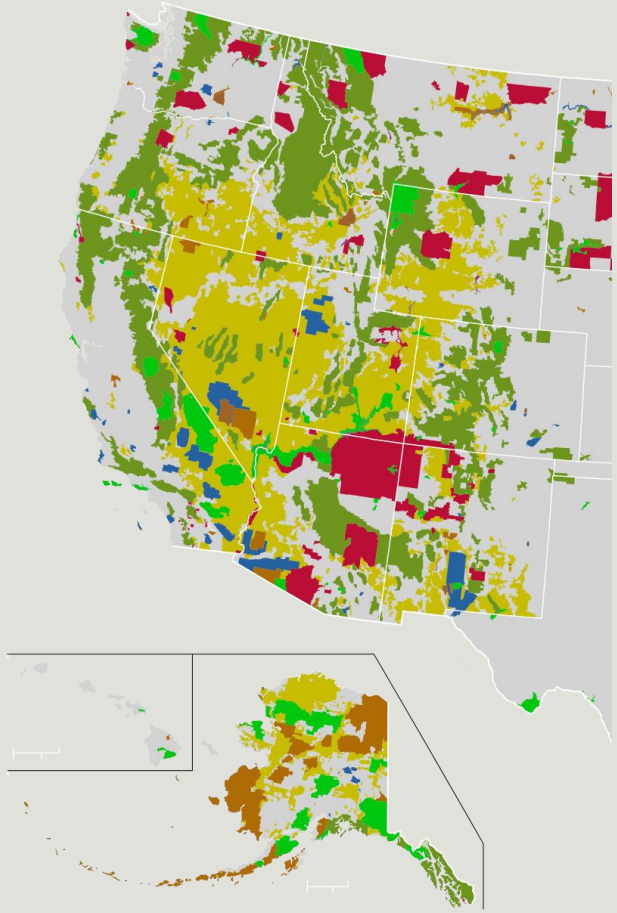
Hypotheses

Null Hypothesis: *Public lands do not significantly influence county-level policymaking.*

Hypothesis A: *The extent of federal lands within a county will significantly influence county-level tax burdens*

Hypothesis B*: The extent of federal lands within a county will significantly influence county-level expenditure levels*

Hypothesis C*: County-level policymaking will be significantly influenced by the share of lands that are managed by the BLM versus the USFS.*



Methods

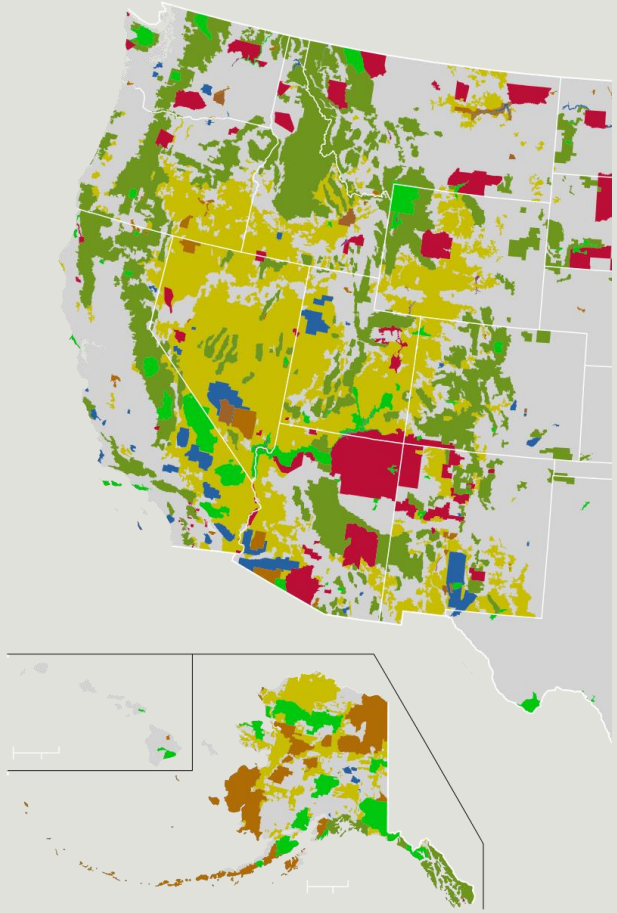
Spatial autoregressive lag model

$$\log(y) = \rho Wy + X\beta + \varepsilon$$

y = per capita property tax burden; per capita total tax burden; per capita expenditures

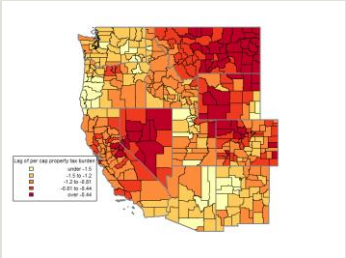
Wy = spatial lag vector using queen's case contiguity, row standardized spatial weights matrix

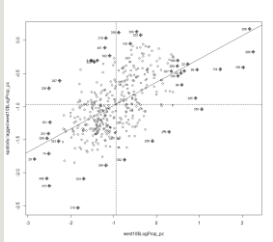
ε = error term



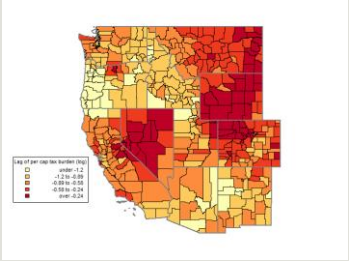
Indicators of Spatial Association

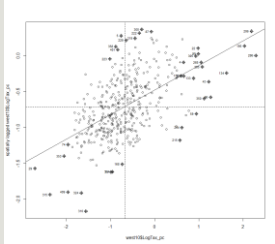
I. Per capita property tax burden



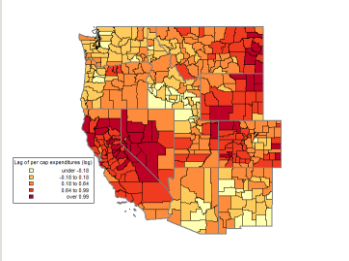


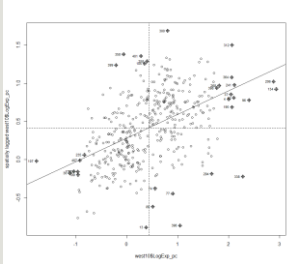
II. Per capita total tax burden

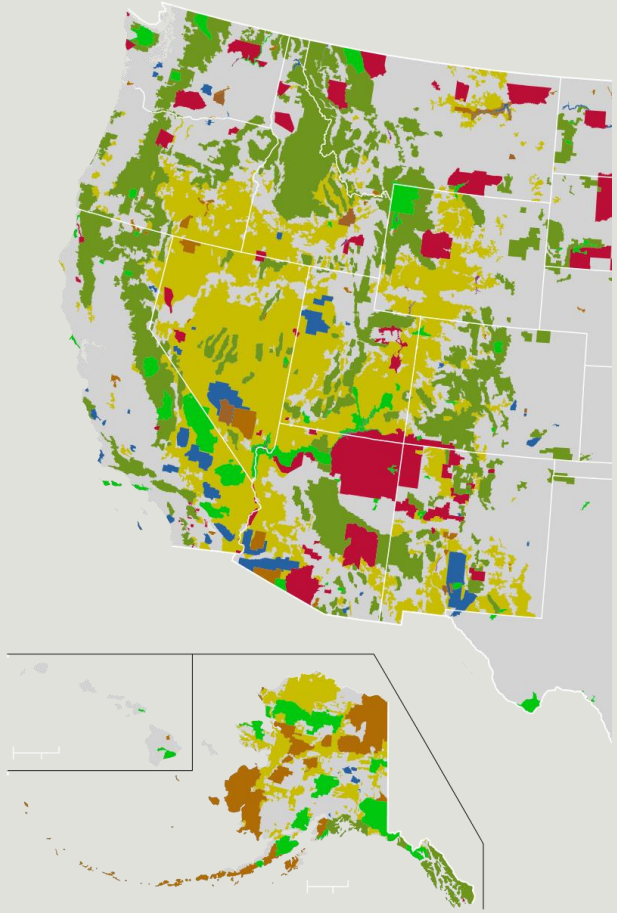




III. Per capita expenditures







Per Capita Property Tax Burden Model

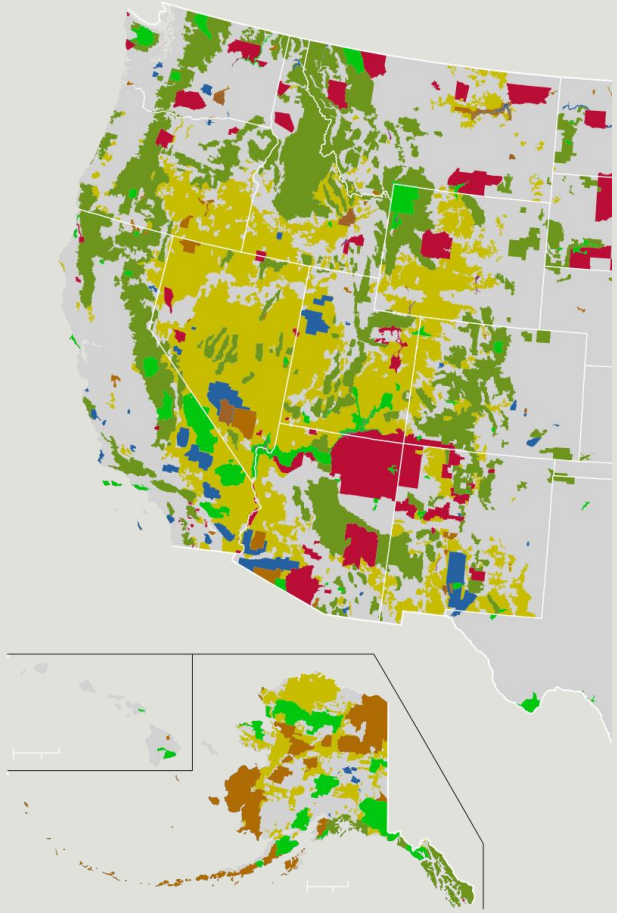
Table 1a. Spatial Lag Parameter Estimates for Property Tax Burden Model[1]

Parameter	Estimate	SE	z Value	Pr > |z|
Intercept	-1.03	0.148	-6.923	<0.001***
ρ	0.549			<0.001
Federal IGR as share of total income	0.187	0.345	0.5399	0.589
% DOI land	0.002	0.001	1.314	0.189
% USDA land	0.001	0.001	0.869	0.384
Per capita income	<0.001	<0.001	5.991	<0.001***
Population	<0.001	<0.001	-1.841	0.066 .
Rural-urban continuum code	0.002	0.001	0.203	0.839

[1]Final model: Ln Per Capita Property Tax Burden = f (fed_igr, DOI, USDA, PC_Income, Population, rucc13). SWM = "W"

[2]AIC: 776.34; AIC for linear model: 857.71

[3]Moran's I test of model residuals (I =-0.036, E(I) = -.002, p = 0.866)



Per Capita Tax Burden Model

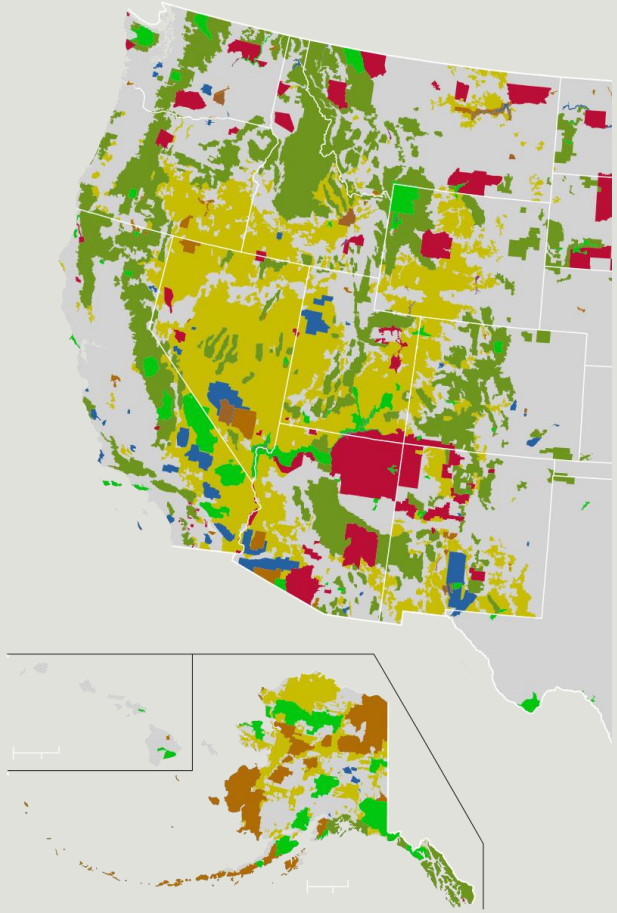
Table 2. Spatial Lag Parameter Estimates for Total Tax Burden Model[1]

Parameter	Estimate	SE	z Value	Pr > |z|
Intercept	-1.103	0.0133	-8.313	<.001***
ρ	0.513			<.001***
Federal IGR as share of total income	-0.006	0.296	-0.219	0.826
% DOI land	0.0024	0.0012	2.051	.0402**
% USDA land	0.0016	0.0012	1.311	0.189
Per capita personal income	0.0001	0.0002	8.273	<.001***
Rural-urban continuum code	0.001	0.0012	0.607	0.543
Population	0.0001	0.0001	-2.389	.016*

[1]Final model: Ln per capita tax burden = f (fed_igr, DOI, USDA, PC_Income, rucc13, Population).

[2]AIC: 711; AIC for linear model: 784

[3]Moran's I test of model residuals (I =-0.044, E(I) = -0.002, p = 0.1705)



Per Capita Expenditure Model

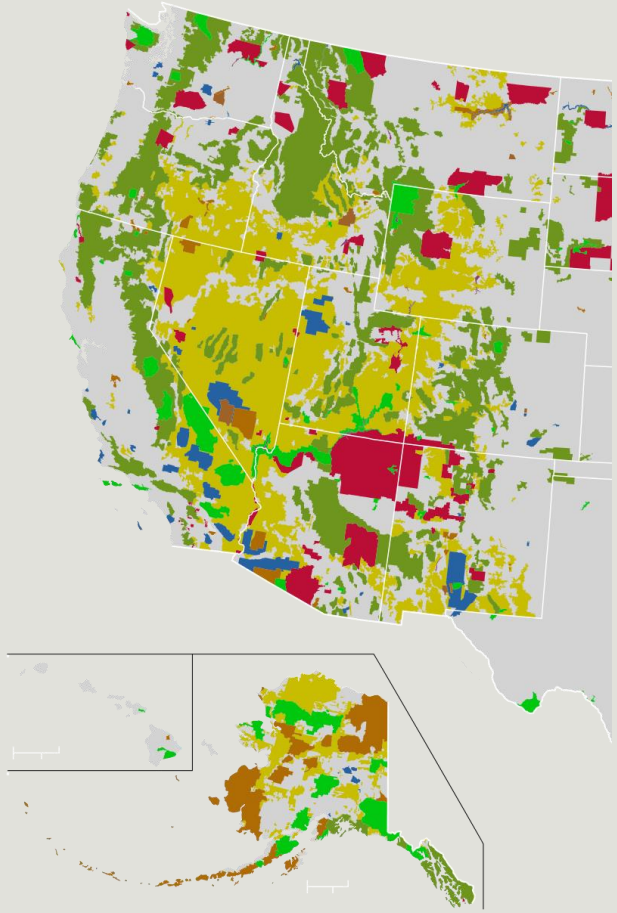
Table 3. Spatial Lag Parameter Estimates for Total Expenditure Model[1]

Parameter	Estimate	SE	z Value	Pr > |z|
Intercept	-0.395	0.128	-3.077	.002**
ρ	0.497			<0.001***
Federal IGR as share of total income	0.702	0.349	2.008	.045*
% DOI land	0.001	0.001	0.757	0.448
% USDA land	0.003	0.001	2.047	.041*
Per capita income	0.0001	.0001a	5.238	<0.001***
Rural-urban continuum code	0.004	0.011	0.398	0.690
Population	-0.0001	0.00001	-1.277	0.201

[1]Final model: Ln per capita expenditures = f (fed_igr, DOI, USDA, PC_Income, rucc13, Population).

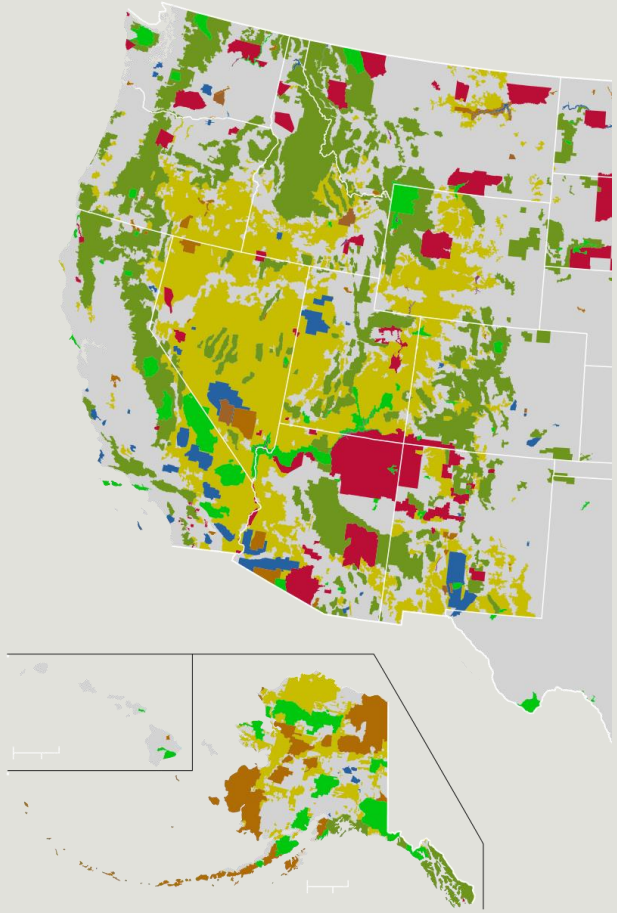
[2]AIC:805.05; AIC for linear model: 872.39

[3]Moran's I test of model residuals (I =-0.034, E(I) = -.002, p = 0.292)



Conclusion

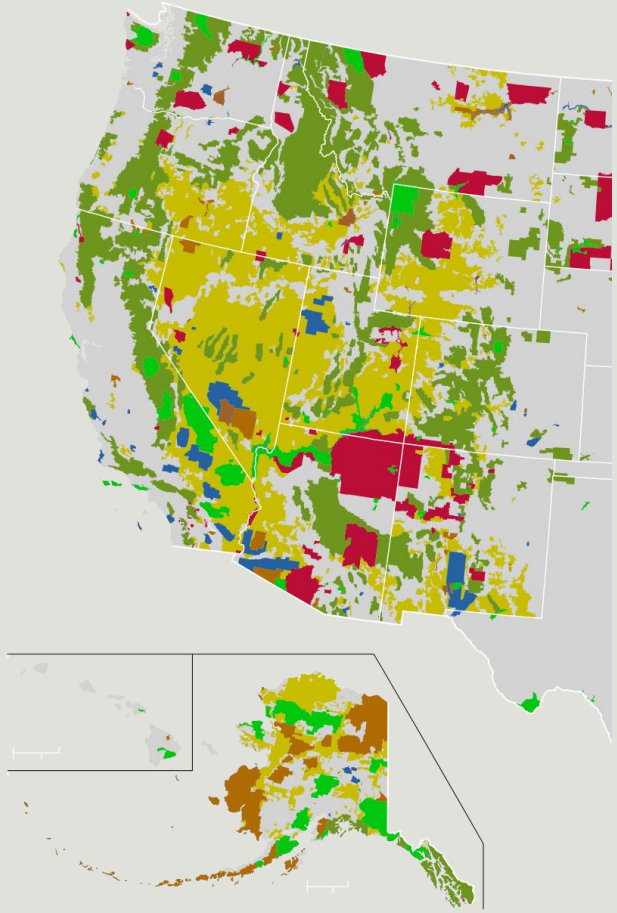
- Public lands have no effect on per capita property tax burden
- Greater shares of DOI land are associated with higher total per capita tax burdens
- Greater reliance on federal IGR is associated with higher than average per capita expenditures
  - Federal mandates?
- Greater shares of national forest within a county are associated with higher per capita expenditures
  - Provisional support for argument that federal lands impose fiscal burdens on counties
- In all models, the average effect of neighbor policymaking has a strong impact on county-level policymaking



Limitations

Fragmented structure of local governments

- Counties
- Special Districts
- School Districts



Inconsistencies in state distribution system

- Local allocation policies and negative fiscal impacts (Dorf et al. 1981)

Thank You

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