

Research Question

Does the designation of national monuments improve economic welfare in terms of employment and wages? Do these potentially positive impacts lead to a Dutch Disease in local counties?

Background

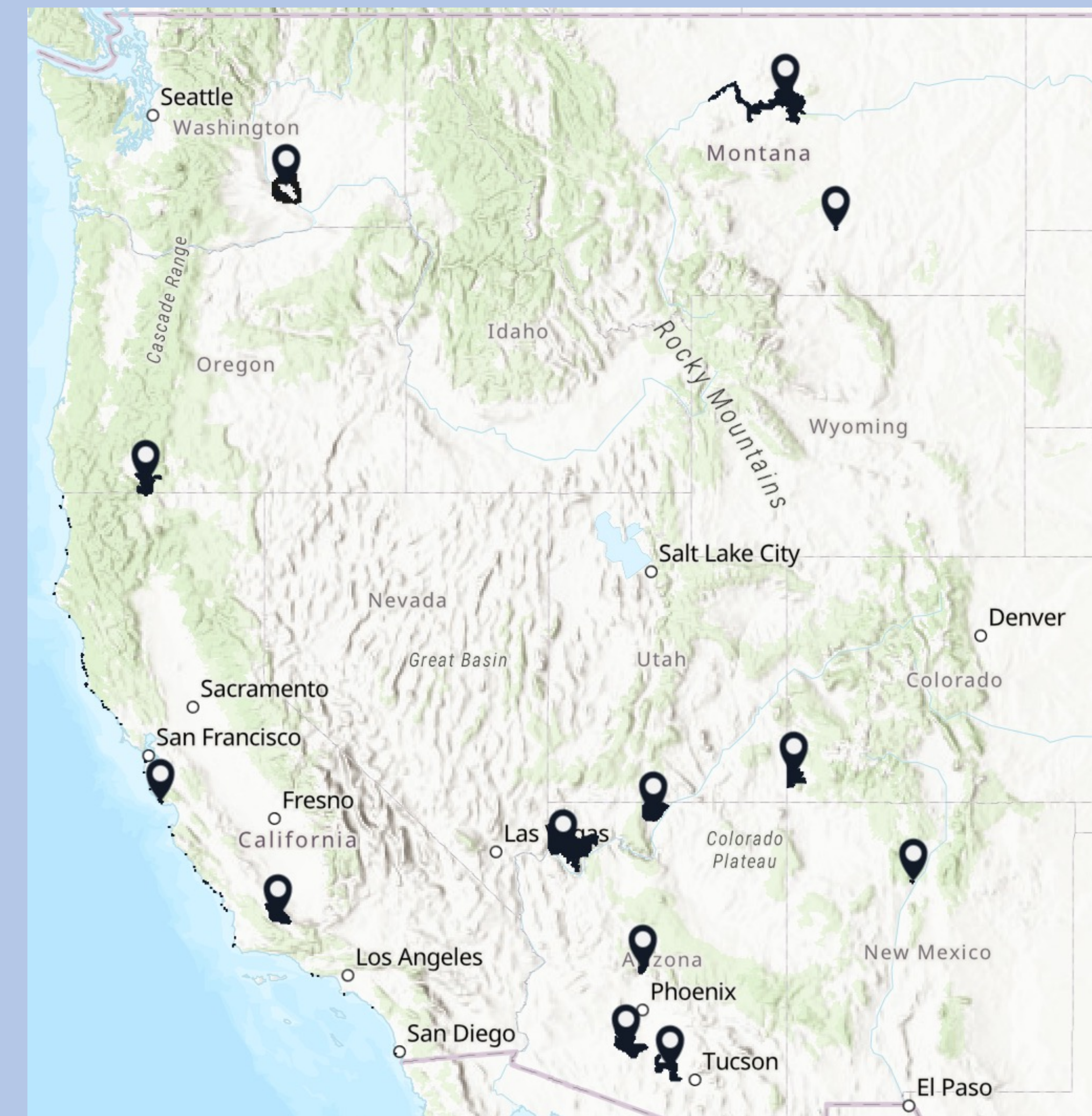
Since 1906 the United States has used national monuments to protect the "historic landmarks, historic and prehistoric structures, and other objects of historical or scientific interest" located on public land. Monument designation causes national recognition of sites attracting visitors from across the country. This influx of tourism to rural western towns in the United States may grow local service and entertainment sectors. However, the designation of national monuments is not without controversy, as the protection of public land may disrupt local industries that used public land for grazing, timber, and mining. These groups voice vocal opposition to monument designation and fear conservation's effects will be negative to their welfare. Empirical research on this subject has been inconclusive, which may be the result of a Dutch Disease undermining growth in response to this shock. This study seeks to measure monuments impacts while controlling for this factor.

Theoretical Framework

This paper measures the economic welfare using the Rosen-Roback model to account for human preferences. Individual's expected wages, employment, consumption habits and aesthetic value preferences are considered when comparing between a county with newly opened national monument and a neighboring county without one. Monument designation is assumed to increase amenity value by protecting land with significant aesthetic or cultural value. Local employment and wages are also projected to increase with rising amounts of seasonal tourism. These two effects are expected to increase welfare for residents in counties with monuments.

However, as tourism focused sectors, such as hospitality and entertainment, grow other sectors may fall behind. Workers will be attracted to the higher wages and greater employment offered by growing sectors and leave the sectors of previous employment. These local industries will shrink these sectors due to both diminished employment and reduction in production externalities. This may result in a lopsided economy that is heavily dependent on external consumers.

National Monuments Surveyed



- Agua Fria
- California Coast
- Grand Canyon-Parashant
- Canyons of the Ancients
- Cascade-Siskiyou
- Ironwood Forest
- Hanford Reach
- Vermillion Cliffs
- Carrizo Plains
- Kasha-Katuwe
- Pompey's Pillar
- Sonoran Desert
- Upper Missouri River Breaks

Data Collection

Data on employment and wages was gathered from the Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW) between 1995-2010. Productivity data was measured in county wide GDP and collected by the Bureau of Economic Analysis from between 2000-2010. County population data from the U.S. Census bureau was used as a control and information on monuments was found from the Bureau of Land Management.

Methodology

To measure the effects of monument designation on a county, treated counties were compared to manually selected control counties. Treatment counties contained one of thirteen monuments designated between 2000-2001. County wide welfare was measured using a difference in differences regression with fixed effects applied. Pre-treatment years identified as 1995-2001 while treated years were from 2001-2010. Results were organized by the NAISC codes to isolate specific industries. Productivity data was compared using a OLS Regression measuring the natural log of GDP to account for different sizes in industry. A dummy variable accounted for treatment and control counties.

County Wide Fixed Effects DiD results

	(1) weekly wage	(2) total wages	(3) taxable wages	(4) employment level
Time × Treatment	-14.27* (5.548)	155589.40 (103798.651)	283825.83*** (50855.468)	2780.85** (929.611)
Population Estimate	0.00** (0.000)	11.70*** (0.980)	2.92*** (0.480)	0.12*** (0.009)
Constant	386.47*** (7.904)	-340867.62* (147876.773)	-339601.60*** (72451.255)	30329.19*** (1324.370)
Observations	416	416	416	416

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Production Natural OSR Results

	(1) Total County lnGDP	(2) Agricultural lnGDP	(3) Mining lnGDP	(4) Tourism lnGDP
Treatment	0.32** (0.120)	-0.13 (0.296)	-0.36 (0.275)	0.34* (0.158)
Year	0.04* (0.019)	-0.01 (0.049)	0.14** (0.045)	0.02 (0.026)
Population Estimate	0.00*** (0.000)	0.00*** (0.000)	0.00*** (0.000)	0.00*** (0.000)
Constant	-73.63 (38.940)	39.41 (98.260)	-272.39** (89.369)	-39.41 (51.591)
Observations	220	185	216	216

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Results

The results of the regressions indicate that national monuments have a significant positive effect on taxable wages and employment. Although weekly wages are expected to decrease this may be a result of different calculation methods accounting for the seasonality of tourism swings. From further sector analysis, the projected lagging sectors of mining and agriculture do not suffer a significant decrease in wages employment. This suggests that there is both a positive overall welfare effect and that these shifts do not result in a Dutch Disease. To further support the lack of Dutch Disease no significant negative effects on productivity are found when comparing treatment and control counties.

Discussion

National monument designation has a positive effect for local economies without harming long term productivity. This leaves monuments open as a policy lever to help ease the transition of rural western economies toward services growing their economies. However, it is important to note that this study surveys only rural, remote areas in the American West. Other economic and geographic climates may have different reactions.