

Sovereignty, Law, and Finance:
Evidence from American Indian Reservations

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Online Appendix

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Figure A1. Addresses on and off reservations in PL280 “mandatory” states

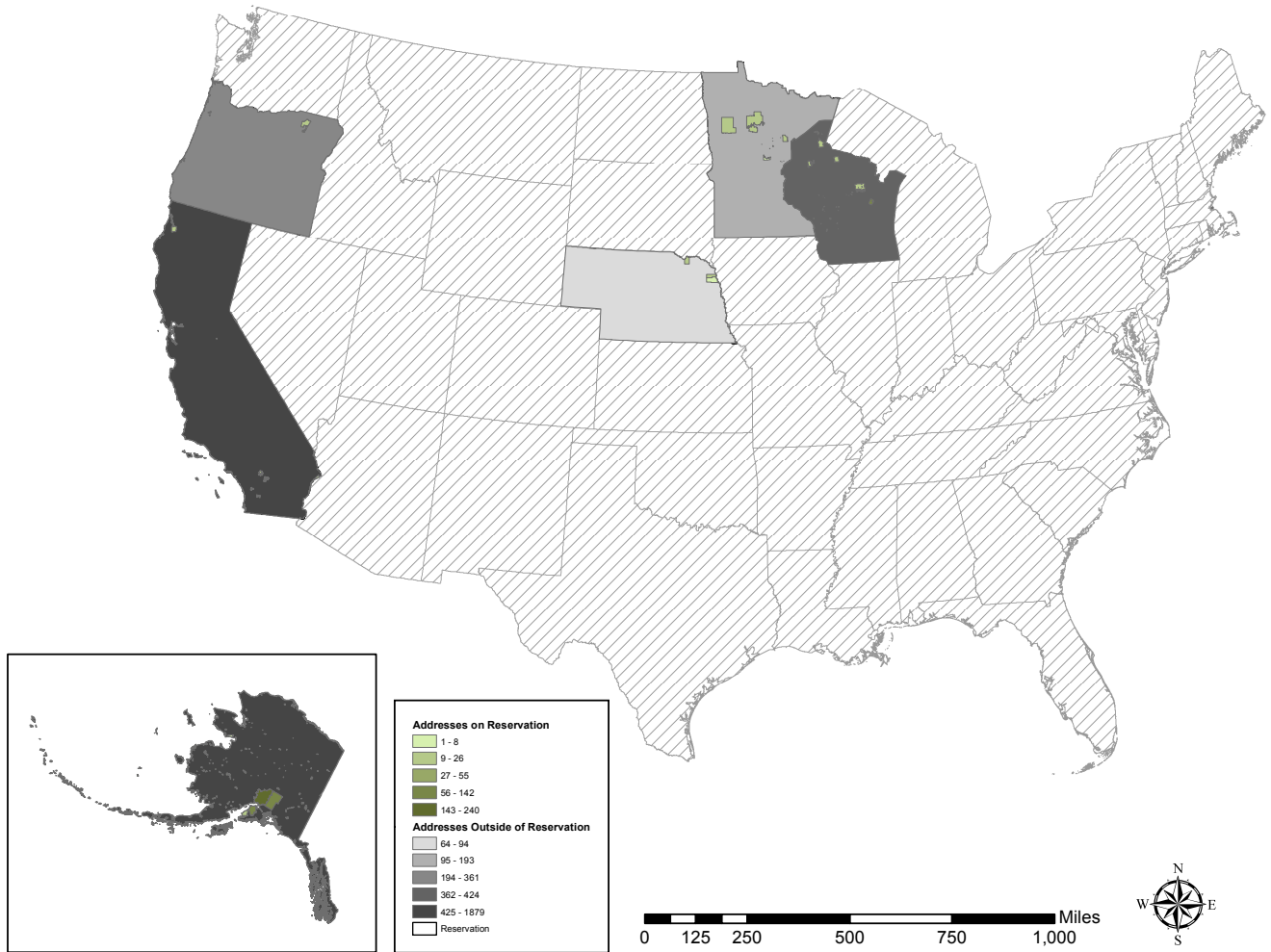


Figure A2. Addresses on and off reservations in PL280 “roll-out” states

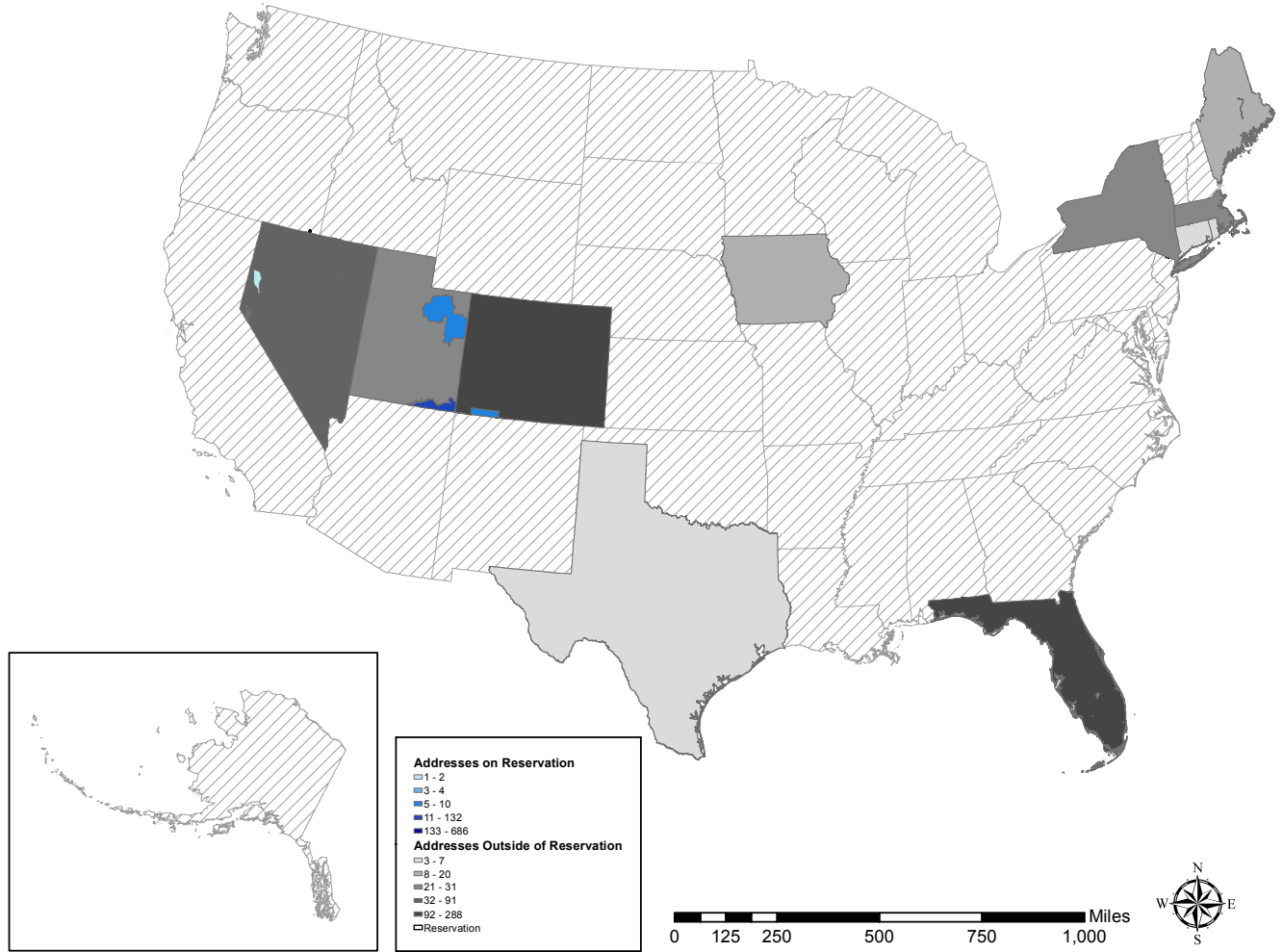
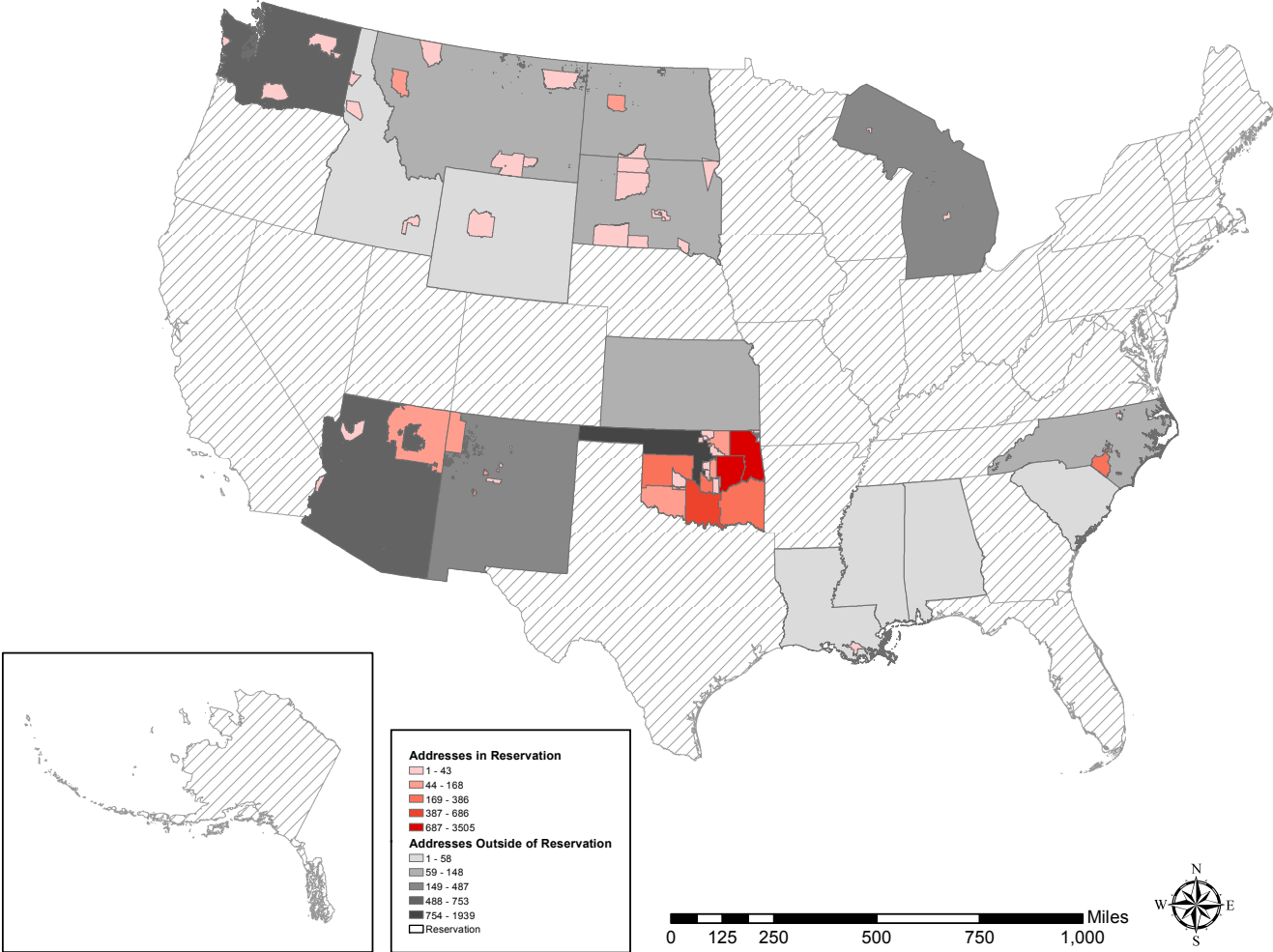


Figure A3. Addresses on and off reservations in tribal civil law states (untreated)



2. Evaluation, Department of the Treasury Native American Community Assistance Program

While this article demonstrates that variation in civil law affects individual Indians’ borrowing costs, the notion that Indians altogether face high borrowing costs and poor access to capital – whether borrowing individually, as businesses, or as tribes – is not new.¹ One major federal program provides special financial, technical, and training assistance to financial institutions that serve individual Indians: the US Department of the Treasury Native American Community Development Financial Institutions (CDFI) Assistance Program (NACA). From 2004 through 2014, NACA provided \$92 million in funding to 135 tribal-related CDFIs in 26 states.² While we might expect that NACA funding differentially supports those borrowers with more expensive borrowing costs (in untreated states), there is not a robust, significant difference in NACA funding across the treatment (See Table A1). Jurisdictional status is not an explicit consideration in locating NACA funds.³ This suggests there may be room for improvement in NACA funding allocations, if one goal is to reduce institutionally generated disparities in borrowing costs.

Table A1: State Law and NACA Funding (2004-2014)

	Model A1
State law (PL280)	-1.814 (1.611)
Income per capita (logged, in state)	5.706 (5.265)
Indian pop. per capita (in state)	50.545*** (13.546)
Year dummies	Yes
Constant	-56.710 (53.761)
Observations	240
States	34
R-squared (overall)	0.24
Robust standard errors clustered by state, *** p<0.01.	

¹See, for example, the Senate Committee on Indian Affairs hearings to address capital in “Indian Country” (17 June 2015).

²<http://www.cdfifund.gov/awardees/db/index.asp>, data downloaded April 2015.

³Interview, US Department of the Treasury staff member, April 2015.

3. “Checkerboarding” and Civil Law Variation

Many Indian reservations are “checkerboarded,” in that land that was allotted under the 1887 Dawes Act and can be privately owned (and used as collateral) is deeply intermixed with land owned by the tribe, land owned by the US government and held in trust for the tribe, and land with other ownership statuses. Effectively, this introduces variation in the amount of land available for private home ownership on different reservations and the clarity that actors have about the ownership status of a particular parcel of land.

Do borrowers on severely checkerboarded reservations derive net benefits from state law? I limit the sample to only those borrowers with addresses on reservations and explore whether variation in allotment further determines variation in their interest rates. Note that, without a model of the selection process that drives a borrower to live on or off a reservation, the representativeness of these borrowers is circumspect.

I treat the data as resulting from a quasi-natural experiment and use the same covariates as in the body of the article. I add covariates about the reservation acreage: *total reservation acres (logged)* (Model A1), *total allotted acres (logged)* (Model A2), *allotted acres as a pct of total* (Model A3), and an interaction term, *allotted per total * state law* (Model A4). These data are difficult to acquire. We took them from a 1974 report by the US Department of Commerce, “Federal and State Indian Reservations and Indian Trust Areas,” Stock Number 0311-00076.⁴

The results in Table A2 show that this approach washes out direct effects of state law. Thus, the full population of Section 184 borrowers, both on and off reservations, is important to generating the results in the body of the article. The absolute size of a reservation does not have a significant effect on an on-reservation borrower’s interest rate (Model A1). Borrowers on reservations with more allotted land, that is ownable but is highly intermixed with other kinds of land, face higher interest rates (Model A2). Allotted acres as a percentage of total reservation acres is my measure of checkerboarding; the coefficient is positive and significant in Models A3 and A4. If borrowers on more checkerboarded reservations benefit more from state civil law, then the interaction term in Model A4 should be negative and significant. It is negative, but it does not

⁴There are 236 observations for which borrowers live on a reservation recognized by the state but not by the federal government; these are marked as missing. There are 205 observations for which borrowers live on a reservation but federal reservation land amounts are not available in this source (28 reservations). As Alaskan Native Villages were not subject to the Dawes Act and have a special status with regard to the types of property ownership possible, addresses in Alaska are excluded.

reach statistical significance. Thus, there is evidence that checkerboarding itself is correlated with higher interest rates. There is not conclusive evidence that state civil law is especially helpful to borrowers on checkerboarded reservations.

Table A2: Effects of “checkerboarding” on Section 184 home mortgage interest rates for borrowers on reservations (1995-2013)

	Model A1	Model A2	Model A3	Model A4
State law (PL280)	0.104 (0.135)	0.118 (0.130)	0.100 (0.126)	0.126 (0.104)
Total reservation acres (logged)	0.002 (0.010)			
Allotted acres (logged)		0.004** (0.002)		
Allotted acres per total			0.061*** (0.007)	0.063*** (0.006)
State law * Allotted acres per total				-0.104 (0.138)
Controls	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
Constant	1.888 (4.754)	1.653 (4.572)	2.246 (4.349)	2.286 (4.373)
Observations	9603	9603	9603	9603
States	24	24	24	24
R-squared	0.91	0.91	0.91	0.91

Robust standard errors clustered by state, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Not reported: Income per capita (logged, in state), Indian pop. per capita (in state), Distance to metro area (logged, miles), Regional 15- and 30-year interest rates.

4. Robustness on Entry to Treatment

Even though other theoretically relevant covariates were not significant predictors of entry to the treatment in bivariate tests, for thoroughness I report regressions of interest with all tested predictors. Models 1 and 2 in Table A3 also includes the following covariates, which vary at the state level (1995-2008): *Total revenue per capita, total debt outstanding per capita, total expenditure per capita, total unemployment compensation per capita, unemployment rate (interpolated), total federal intergovernmental revenue per capita, total expenditure on public safety per capita, total corrections expenditure per capita, total judicial expenditure per capita, total police protection expenditure per capita, prison population in state (interpolated), count of federally registered tribes in state (as of 2015)*. Coefficients are not reported for space considerations (see replication files).

Table A3: Robustness: Including Other Possible Predictors of Entry to Treatment (1996-2008)

<i>Dependent variable: Interest rate (2.63 to 9.63)</i>		
	Model 1	Model 2
State law (PL280)	0.029 (0.055)	0.049 (0.046)
Home on reservation	0.017 (0.024)	0.046** (0.014)
State law * Home on reservation	-0.157** (0.060)	-0.146*** (0.040)
Income per capita (logged, in state)	-0.751** (0.313)	-0.020 (0.178)
Indian pop. per capita (in state)	-0.426 (0.904)	-1.992*** (0.433)
Other state-level covariates †	Yes	Yes
Distance to metro area (logged, miles)	0.006 (0.006)	0.002 (0.003)
Regional 15-year interest rate	0.672*** (0.020)	0.675*** (0.018)
Regional 30-year interest rate	0.644*** (0.020)	0.639*** (0.015)
Originating Lender dummies		Yes
Servicing Lender dummies		Yes
Coborrower		0.017* (0.009)
Refinance		-0.077** (0.028)
Loan term (logged, months)		0.122 (0.136)
Loan amount (logged)		-0.114*** (0.030)
Casinos (count, state, 2013)		0.005*** (0.001)
Year dummies	Yes	Yes
Constant	11.145*** (3.117)	4.583* (2.263)
Observations	5714	5398
States	32	31
R-squared	0.61	0.72

Robust standard errors clustered by state, *** p<0.01, ** p<0.05, * p<0.1.

† See text for list.