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

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Abstract

In 1953, Congress supplanted the tribal civil law on some American Indian reservations with the civil law of the US state in which they are located. In the vein of cross-national literature on law and finance, I demonstrate that Congress's action reduced external financial actors' uncertainty over the enforcement of contracts on some reservations. Using novel data on 20,000 home loans to tribal members guaranteed by a US Housing and Urban Development program (1996-2013), I find a causal effect at the individual level: mortgage holders governed by US state civil law pay consistently lower interest rates. Thus, externally imposed law generates long-term benefits for tribal members. Nonetheless, qualitative extensions suggest that neither the presence nor the magnitude of the effect offsets many tribes' prioritization of their sovereignty, rather than the individual-level economic benefits that can result from compromising it.

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Consider the similarities between the 326 federal American Indian reservations and very small developing countries.[1] A tribal government's sovereignty – over issues like membership criteria, taxation, and regulation – reflects that of a country in many ways.[2] Yet as in a developing country, a tribal government must negotiate the constraints on sovereignty that emerge "in the face of political, economic, and social disadvantage."[3] Of the approximately 2 million American Indians living on or near a reservation in 2010, 23 percent earned incomes below the poverty line, and many tribal members encounter local unemployment rates of 50 percent or more.[4] Given such impoverishment, tribal governments prioritize bringing capital to where capital is scarce. In so doing, tribal governments look to hands-tying institutions similar to those on which developing countries rely. For example, a partial waiver of sovereign immunity is de rigueur when tribal governments issue debt or enter into contracts with non-tribal ("foreign") firms. Put simply, tribal governments regularly trade sovereignty for credibility. Yet as in developing countries, tribal governments are not interested in foregoing sovereignty for credibility.

Tribes have built up domestic legal, economic, and social institutions over many generations.[5] Such institutions generate a cultural currency that encapsulates the beliefs and priorities of a people. Unsurprisingly, tribes have been loath to wholly forego these tangible manifestations of sovereignty. US policymakers fought against tribal sovereignty during the "termination era" of US-Indian relations in the 1950s. The top-down zeitgeist was to "completely liberate the Indians and remove them from any suspicion of being wards of the Government" by removing their special status.[6] Congress saw a problem with "lawlessness" on reservations and came up with a fix: Pub-

[1] For ease of exposition, I refer to all federal Indian lands as "reservations," whether they are technically called pueblos, rancherias, etc. The Bureau of Indian Affairs counts 326 reservations, although this is an approximate number as definitions vary. Legally, the federal government calls this "Indian Country." Not every of the 567 recognized US tribes have a reservation, but some reservations are home to multiple tribes. The federal government holds 56.2 million acres in trust for tribes.

[2] Chief Justice Marshall noted that the "Indian nations had always been considered as distinct, independent political communities, retaining their original natural rights...from time immemorial." *Worcester v Georgia* (1832). I use the term sovereignty, or the authority to govern a particular territory, because this is the terminology used by actors in the American Indian community. The sovereignty of indigenous groups is, however, generally at the behest of the overarching state.

[3] Evans 2014: 279.

[4] 2013 American Indian Population and Labor Force Report, US Department of the Interior (16 January 2014). In the 2010 Census, 5.2 million people living throughout the US identified as American Indian/Alaskan Native (1.7 percent of the US population).

[5] E.g., Barsh 1986, Cornell 2015, Evans 2011*a*, Wilkins and Stark 2011. The 1934 Indian Reorganization Act allowed tribes to "adopt tribal constitutions, and incorporate and function as units of local government." Cornell and Kalt (2000) link variation in tribal constitutions to reservation unemployment and income.

[6] Walt Horan, "State Legal Jurisdiction in Indian Country," Subcommittee on Indian Affairs, 82nd Congress (28 February 1952). Horan was later concerned when termination policies were imposed without tribal referenda.

lic Law 83-280 (PL280), which was imposed without tribal referenda and in the face of significant Indian protest. PL280 replaced criminal jurisdiction on reservations with the criminal jurisdiction of the US state in which the reservation is located. And, without explicit justification, Congress replaced tribal civil law with state law as well.

In fact, PL280 set up a quasi-natural experiment in which some tribes were treated with the civil law of their US state while others retained the preexisting tribal jurisdiction.[7] This is because Congress could mandate state law only in those states with constitutions that did not require amendment to do so. Some other states went on to adopt similar legislation (again without tribal referenda), which I argue can be thought of as an as-if random roll-out phase to the experiment. This strong research design moves beyond clever identification strategies intending to break the endogeneity between institutions and economic development (e.g. Acemoglu, Johnson and Robinson 2001).

When PL280 and roll-out laws replaced some tribes' civil law with that of the state, potential economic effects were not part of the discourse.[8] Yet scholars have shown that externally credible institutions, particularly concerning contracting and property rights, spur development. From this point of view, strong civil legal institutions are a means to an end – a mechanism for government actors to establish private property and principles of commercial exchange. Imposed civil law is deeper than a waiver of sovereign immunity, because it keeps the sovereign from intervening in either its own or in private transactions outside of an externally interpretable framework of rule of law.

I use novel granular, contemporary data on 20,000 home mortgages made to tribal members to test the effect of PL280 and roll-out laws. These FOIA-requested data cover the population of borrowers using the popular Section 184 program, facilitated by the US Department of Housing and Urban Development (1996-2013). These data are notable, because they allow me to precisely test mechanisms at play in the law and finance literature. Access to state (rather than tribal) courts should lower non-Indian lenders' transaction costs around contract enforcement. Simply put, whatever the quality of tribal courts, it is easier for lenders to deal with only one, familiar

[7] Untreated reservations are actually subject to joint tribal and federal jurisdiction. However, civil legal matters are handled by tribal rather than federal courts, as federal prosecutors typically do not prioritize civil Indian cases (LaFontaine 1974, Wilkins 1998). Thus, I use simplifying language, comparing state or tribal civil law.

[8] In fact, some scholars and practitioners argue that PL280 and its roll-out have hurt reservation Indians' economic well-being (Goldberg-Ambrose 1997, Goldberg and Champagne 2005).

legal system. Thus, tribal members treated with the civil law of the state should enjoy economic benefits in the form of better interest rates. Because these data allow me to recover an effect at the individual level, I move beyond prior literature that relies on aggregate measures at the level of the political unit or only among elites.

I find a significant effect of state (and not tribal) law on individual interest rates – but one that is small in magnitude. The small effect bodes well for tribal actors uninterested in adopting "termination era" policies and, as I demonstrate with qualitative interviews, supports tribes' creativity in getting around that effect through institutional work-arounds. Further, its small magnitude contrasts with the finding in Anderson and Parker (2008), where state civil law is associated with around a 30 percent increase in a given reservation's income per capita between 1969 and 1999.[9] In fact, scholarship in economics has erroneously analyzed PL280 as an unambiguous natural experiment, such that we cannot know whether it is PL280 or other predictors of entry into the treatment causing income effects.[10] Another contribution of this article is to provide a corrective account of PL280 as a quasi-experiment (at best), based on archival research.[11]

Whether a reduction in individual borrowing costs compensates for "termination era" policy that has compromised tribal sovereignty is, of course, an important normative question. By improving relatively impoverished tribal members' borrowing costs, imposed US state law can mitigate inequalities between tribal members and non-Indian US citizens. Yet in line with global histories of imperialism and colonialism, it took coercion to replace (some) tribal legal institutions with a more hierarchical relationship under US state laws (cf. Lake 2009, Spirling 2012). PL280 reinforces the hierarchical relationship between some tribes as "domestic dependent nations" in the United States.[12] Other US entities – like Guam or Puerto Rico – also navigate economic and political hierarchies with the US while maintaining some sovereign rights. States around the world mirror the US experience with indigenous and post-colonial territories. In short, the contemporary tradeoff between sovereignty and economic well-being under study here, and the coercion behind it, is not unique. What this article does is help to quantify the (limits of the) upside of coercion.

The article proceeds as follows. After introducing the literature on law and finance, I argue

[9] Anderson and Parker 2008: 653–654.

[10] See also Cookson (2010) and Parker (n.d.).

[11] If the reader is unconvinced that PL280 is even a quasi-experiment, I also abandon this approach and examine effects as if PL280 has no experimental qualities.

[12] This is Chief Justice Marshall's characterization in *Cherokee Nation v Georgia* (1831).

that PL280 and the as-if random treatment of tribes constitute a quasi-natural experiment on civil legal institutions. I then describe the 20,000 Indian mortgages (1996-2013) under study and present results showing the advantages of state civil law. I also confirm the advantages of state civil law by estimating a model with more conditioning variables as a robustness test. Further extensions address default rates and home loan limits.[13] Finally, I use qualitative data to put the limited size of the effect in context. The conclusion considers what this quantification of the costs of sovereignty means for American Indian tribes and capital-poor developing countries more generally.

Law and Finance

The study of political economy has taught us that the exercise of sovereignty comes with costs. Governments face the problem of credibly committing to protect external actors' property rights while still acting as sovereigns. Internationally, governments turn to institutions like the World Trade Organization to tie their hands, increasing market actors' confidence that the government will not unduly interfere in its own transactions with private counterparties or in wholly private transactions. Nonetheless, conducting economic transactions in a foreign country exposes an actor to that country's domestic law, such that investors are sensitive to domestic institutions. Even in an increasingly globalized world, the credibility of domestic institutions affects capital access and borrowing costs.[14]

A robust literature looks at the effects of weak property rights institutions on development outcomes.[15] Can the negative welfare effects of weak institutions be overcome simply by transplanting stronger replacement institutions from somewhere else? Berkowitz, Pistor and Richard (2003) argue no: for legal institutions to be effective, citizens must be invested in the law's operation and enforcement, and, further, legal practitioners must be able to improve the law in response to citizen demand (166–167). Otherwise, a country is subject to the "transplant effect": law unfamiliar to the domestic population, not adapted to local conditions, and imposed via coercion will

[13] In the Appendix, I consider the extent to which other federal programs mitigate PL280's effects. I also analyze the influence of other property rights issues on reservations (i.e. "checkerboarding").

[14] Farrell and Newman 2014.

[15] E.g., Johnson, McMillan and Woodruff 2002, Levine 2004. For commentary, see Djankov et al. 2003, Glaeser et al. 2004. For work exploiting cross-national variation, see for example Acemoglu, Johnson and Robinson 2001, Djankov et al. 2006, Easterly and Levine 2003, La Porta et al. 1997; for sub-national variation, see for example Jha 2013.

be ineffective. Ineffective institutions, in turn, undermine economic well-being.[16]

Certainly, the effect of transplanted law on the endogenous development of economic activity may be complicated, especially in the short run. But even if law is imposed unilaterally, on a different nation, and without adaptation to the domestic population, it can improve outsiders' understanding of transacting in a society. In fact, these stark conditions may be best suited to improving a society's access to external sources of finance that can, in turn, improve development outcomes. Thus, even institutions that suffer from the "transplant effect" can have some positive causal effect on economic well-being.

A small literature has explored the potential upside of transplanted law by using American Indian tribes as a laboratory.[17] One important focus of this work is on complications around land tenure on American Indian reservations. The Dawes Act of 1887 led to a "checkerboarding" problem, whereby land owned or held in trust by individuals, the tribe, or the United States is extremely intermixed within some reservations.[18] Anderson and Lueck (1992) demonstrate that reservation agricultural productivity decreases as more land is held in trust relative to private land, because private land can uniquely be used for collateral.[19] Thus, US-origin institutions establishing private property can have positive effects on tribal well-being.

Put differently, there may be conditions under which the existence of tribal institutions, incongruent with US institutions, can have detrimental effects on tribal well-being. This topic is not just of academic interest. In 1984, a US commission reported that "businesses see uncertainty in situations where law is subordinate to the whims of tribal councils...There is a fear that tribal courts will not protect the property rights of non-Indians by according them due process of law...Uncertainty increases risk and risk increases the cost of doing business on Indian reservations."[20] In 2012, a US senator posited that credibility problems are "only made worse by what some have described as a casual approach to the rule of law."[21] These US officials raise an impor-

[16] See also Rodrik 2007.

[17] See especially Anderson 1992, 1995, Cornell and Kalt 2000, Miller 2012. See Gitter and Reagan 2002, Kuhn and Sweetman 2002 on the broader political economy of indigenous populations.

[18] Akee 2009 studies the effects of checkerboarding on housing investment on one California reservation. I consider the effects of "checkerboarding" in the Appendix.

[19] See also Anderson, Benson and Flanagan 2006.

[20] Report and Recommendations to the President of the United States (30 November 1984): 36. See also Haddock and Miller 2004.

[21] Senator Shelby, Alabama. US Senate Committee on Banking, Housing, and Urban Affairs. Opportunities and Challenges for Economic Development in Indian Country. 112th Congress: 10 November 2011.

tant issue: business actors may not be confident that the contracts they make under US law will be enforced by tribes. Specifically, this worry is relevant when tribes have their own sovereign civil law (and US institutions have not been transplanted): tribal actors have the ability to influence contract enforcement via tribal courts and institutions, generating uncertainty for the non-tribal counterparty. This uncertainty can increase enforcement costs and thus affect tribal members' access to contracts. In fact, "termination era" federal government policy has transplanted US civil law into some tribal jurisdictions but not others. This variation in tribal sovereignty over civil law facilitates a test of (how much) institutions influence enforcement costs.

Public Law 280 as a Quasi-Natural Experiment

To leverage variation in civil law across reservations, I need to consider how that variation in civil law came about. In this section, I draw on archival sources to provide a corrective: variation in whether a reservation is governed by state law can be considered as-if random only upon controlling for significant predictors of entry into the "treatment." With this institutional history in hand, I turn in the next section to test the hypothesis that tribal borrowers governed by the civil law of the US state enjoy lower borrowing costs, because enforcement costs are lower.

American Indian-federal government relations took a new turn around the 1950s. This was the "termination era," when many in the US government advocated eliminating the reservation system, removing federal jurisdiction over reservations, and making tribal members subject to state law.[22] In 1953, the sentiment in Congress was to have the Bureau of Indian Affairs "begin going out of business in an orderly manner."[23] PL280 was a manifestation of this: it gave some states the unilateral right to supersede the standard combined tribal and federal legal jurisdiction and assert state jurisdiction on Indian lands. Note that, when it comes to civil matters, what is otherwise joint federal and tribal jurisdiction on Indian lands is effectively tribal jurisdiction, as federal prosecutors are known not to prioritize civil Indian matters.[24] For simplicity, I characterize civil law jurisdiction on Indian lands as either tribal or state.[25]

[22] In this era, Congress terminated the special status of 1.4 million acres of Indian land and 13,263 Indians (Cowger 1999: 100). The policy eroded in the 1960s and was formally revoked in 1988.

[23] Jimenez 1998: 1959-1661.

[24] LaFontaine 1974, Wilkins 1998.

[25] It is possible although unlikely that, if a creditor fails to win in tribal court, the creditor could obtain review of the tribal court's action in federal court, under the 1968 Indian Civil Rights Act (Gover 1980).

Congress's "foremost concern" in passing PL280 was "lawlessness on the reservations and the accompanying threat to Anglos living nearby."[26] Thus, PL280 was primarily about states taking over criminal jurisdiction on Indian lands. The National Congress of American Indians (NCAI), the most prominent national Indian lobbying organization, protested that tribes had law-and-order institutions already and, moreover, that tribal members would not understand state law and would not be treated fairly in state courts. Nor did PL280 come with additional federal appropriations or requirements that states increase their budgets for law enforcement in tribal areas. Most of all, the NCAI and tribes were angered that Congress imposed PL280 on tribes without tribal referenda on the matter.[27] Indeed, when he signed PL280 into law, President Eisenhower said he had "grave doubts as to the wisdom of certain provisions," particularly the imposition without tribal referenda.[28]

In a study of PL280, Goldberg-Ambrose (1997) posits that, "most likely, civil jurisdiction was an afterthought...added because it comported with the pro-assimilationist drift of federal policy and because it was convenient and cheap."[29] Indeed, while the extension of criminal jurisdiction was thoroughly discussed in hearings on PL280 and related bills from 1950 to 1953, the reasons for civil jurisdiction were never clearly articulated. A 1975 US circuit court ruling confirms this; the judge held that there is little in the legislative history to convey a "congressional rationale" for extending state jurisdiction over civil matters on reservations.[30] Neither the NCAI nor individual tribes articulated specific concerns about civil jurisdiction when opposing the legislation, but neither did they articulate support.[31] This article focuses on the effects of the imposition of state civil law, an "afterthought" to the main purpose behind PL280, via the mechanism that state civil law

[26] Ackerman, David. Background Report on Public Law 280, Congressional Research Service: 541. Quoted in Anderson 2012.

[27] Cowger 1999: 99-111.

[28] "The failure to include in these provisions a requirement of full consultation in order to ascertain the wishes and desires of the Indians and of final Federal approval, was unfortunate." Statement by the President upon Signing Bill Relating to State Jurisdiction over Cases Arising on Indian Reservations, 165 Pub. Papers 564, 564-565 (15 August 1953).

[29] Goldberg-Ambrose 1997: 50.

[30] *Santa Rosa Band of Mission Indians v Kings County* (9th Circuit 1975). Quoted in Jimenez 1998: 1660.

[31] According to Congressional records and the Smithsonian National Museum of the American Indian archives of the NCAI, 1945-1960. Cowger (1999) claims that some California tribes were interested in state civil jurisdiction (103). There is a mention in the Congressional record that Hoopa Valley Indians in California "have adopted resolutions favoring the proposal to confer civil and criminal jurisdiction on the State," and that "Representatives of other groups have also indicated their approval" (Murdcok, Committee on Interior and Insular Affairs, House of Representatives. 82nd Congress, Report No. 2161. 11 June 1952). My best attempts to use archives to identify these other groups have failed. Suffice it to say, Indian support for PL280 appears to be limited to some sentiment in California.

substantially decreases external financial actors' transaction costs in enforcing contracts on Indian reservations.

"Termination era" policy was intended, ultimately, to reshape federal government relations with all American Indians. However, PL280 focused on tribes in six "mandatory" states: Alaska, California, Minnesota, Nebraska, Oregon, and Wisconsin (see Table 1A). PL280 was limited to these states, because these states did not need amendments to their state constitutions in order to change jurisdiction on tribal land. State constitutions written prior to 1881 and Alaska's constitution, written in the midst of "termination era" policy, allow the federal government to cede jurisdiction to the state.

[Table 1A about here.]

In 1881, a Supreme Court ruling limited state authority in Indian lands with regard to non-Indian crimes while maintaining the status quo of tribal and federal authority.[32] Since then, the federal government has required as a prerequisite to statehood that a state constitution include a provision ensuring federal jurisdiction on Indian lands, to cement the 1881 ruling and remove the possibility of further similar cases.[33] Ironically, this prerequisite for statehood stymied the federal government's ability to unilaterally cede its jurisdiction in pursuit of "termination" in the 1950s. For post-1881 states, an act of Congress cannot itself change jurisdiction.

To the extent that the timing of statehood and thus the content of state constitutions is plausibly exogenous, we can think of PL280 as a natural experiment. Several additional factors, however, compromise as-if randomness and make PL280 a quasi-natural experiment. First, Nevada – home to Indian lands and a state as of 1864 – refused to be a mandatory PL280 state. This is because PL280 did not include any subsidies to help states extend legal institutions to Indian lands, nor could states tax reservation land to raise revenues.[34] Thus, Nevada (and not its tribes) initially opted out of the treatment for reasons plausibly exogenous to external actors' certainty over civil law enforcement on Indian reservations.

Second, Congress had already passed a PL280-like law in 1950 that applied New York state civil law to New York tribes (and a law in 1948 that extended New York state criminal law).[35]

[32] *United States v. McBratney* (1881).

[33] Anderson and Parker 2008, Wilkins 1998.

[34] 83rd Congress, 1st Session, Senate, Calendar No. 691, Report No. 699 (to accompany HR1063), July 29 (legislative day July 27), 1953: 6.

[35] Additionally, in response to several heinous crimes and at California's request, Congress in 1949 extended civil

Interestingly, President Truman allowed New York jurisdiction to be changed but vetoed an analogous law in 1949 that applied to the Navajo and Hopi tribes in (post-1881 states) Arizona, Utah, and New Mexico. Why this difference in treatment? In his veto, Truman offers the explanation that New York laws applied to "comparatively small groups, the members of which through long association with neighboring whites, had reached the stage where they were prepared to and wished to be governed by State and local law. The Navajo and Hopi...are, indeed, the Indians who are probably least prepared for such a major change."[36] Despite Truman's words, records show that New York Indian leaders protested against and were "disturbed by the step-by-step intrusion of the State Government" forced upon them, consistent with later Indian protest against PL280.[37] Were the Navajo and Hopi able to endogenously determine their treatment – that is, did Truman respond to their protests? Elites in Arizona, Utah, and New Mexico were likely reluctant to have Indians serve on state juries, as would occur if state law held on reservations; to spend state resources extending legal and policing institutions to the reservations; or, frankly, to forego decades of local prejudice that would accompany equal treatment for Indians under state law.[38] In other words, there is reason to believe that the non-treatment of the Navajo and Hopi (as well as the non-treatment of the many other tribes in Arizona, Utah, and New Mexico) is not due to actions by the Navajo and Hopi themselves. In fact, because Congress added the topic of legal jurisdiction to what was otherwise a development funding bill, the Bureau of the Budget advised Truman to veto.[39] Clearly, the administration did not see a change in legal jurisdiction as furthering economic development as hypothesized here.

Third, a number of states chose to amend their constitutions to accede to PL280 and impose state civil law on Indian lands after 1953.[40] Think of this as a roll-out phase after the initial PL280

and criminal jurisdiction to California over the Agua Caliente Reservation.

[36]Truman, Harry. "Veto of Bill Establishing a Program in Aid of the Navajo and Hopi Indians" (17 October 1949). Truman also wrote that the change of jurisdiction "is in conflict with one of the fundamental principles of Indian law accepted by our Nation, namely, the principle of respect for tribal self-determination in matters of local government." No such claim was made on behalf of the New York tribes.

[37]Streator, George. "State Laws Urged to Benefit Indians." New York Times (22 May 1949). A federal spokesperson said that it allowed for "court reform that will make the Indians equal to all other people in the enforcement of contracts." However, the spokesperson "could not answer the chief contention of some Indians that the measure was intended to destroy the reservation."

[38]American Indians could only just vote in Arizona and New Mexico following court rulings in 1948; Utah did not repeal anti-Indian voting laws until 1957.

[39]One advisor specified that the issue of jurisdiction was "unrelated, and unnecessary, to the accomplishment of the rehabilitation program." Letter to William Hopkins, White House (17 October 1949), from Roger Jones, Assistant Director, Legislative Reference, Executive Office of the President, Bureau of the Budget. Harry S. Truman Library, White House Records Office Files, Box 57, Folder "October 17, 1949."

[40]PL280 permitted jurisdictional change in the future should states make the necessary amendments to their

treatment. Between 1953 and 1968, Florida, Iowa, and Nevada asserted civil jurisdiction over their reservations, again without tribal referenda. In the 1968 Indian Civil Rights Act, Congress approved a provision requiring a state to obtain tribal consent before adopting PL280. Put differently, since 1968 the decision on acceding to the treatment has been endogenous to the will of the potentially treated. No tribe has consented to be treated.[41] Nonetheless, several states have since gotten around the 1968 provision for tribal consent to PL280 by passing state-equivalent laws, without tribal referenda: Colorado, Connecticut, Maine, Massachusetts, Rhode Island, Texas, and Utah. Table 1B lists roll-out treatments.

[Table 1B about here.]

Summing up, from a research design standpoint, Nevada's initial rejection of PL280; New York's treatment and Arizona, Utah, and New Mexico's non-treatment; and the roll-out phase would ideally be plausibly exogenous to the state-level PL280 treatment. To examine this quantitatively, I construct a series of hazard models predicting a state's entry into PL280 or its roll-out including a variety of covariates that we may worry pollutes the exogeneity of entry with regard to the ultimate dependent variable, tribal member well-being. These hazard models predict time until entry to the treatment for the 33 US states that are host to Indian tribes.[42] Altogether, 17 states enter into the treatment, from 1950 to 1987. Table 1C summarizes the states that do not enter the treatment.[43]

[Table 1C about here.]

Consistent state-level political and economic covariates are available beginning in 1948, which allows an appropriate point of left-censoring for a treatment that begins in 1950.[44] Comparable data extend through 2008; results are robust to right-censoring at that point or in 1988, after the last state entered the treatment. First, I test whether covariates that capture a state's devel-

constitutions.

[41] Two Indian tribes have been forced to accede to PL280 since 1968. For the Mashantucket Pequot Nation in Connecticut, Congressional recognition legislation provided that PL280 would apply notwithstanding the 1968 law (PL98-134). The Texas Ysleta Del Sur Pueblo were treated as if they had consented to PL280 (PL100-89). In the analysis below, results are robust to either dropping or coding as state civil law the very few observations affected by these impositions.

[42] Indigenous Hawaiian persons are counted under a different federal regime; Hawaii is thus not home to Indian reservations and drops out of the analysis.

[43] Some states, such as North Carolina, Wisconsin, and Louisiana, recognize tribes that the federal government does not recognize. These tribes cannot be treated and are not part of the analysis.

[44] Unfortunately, state-level covariates are unavailable for Alaska pre-treatment or at the point of treatment, as it was simultaneous with statehood. Thus, it drops out of the analysis.

opment level and economic health predict entry to the treatment. Income effects might matter, because PL280 was unfunded and thus made demands on state resources. Helpfully, in bivariate Cox proportional-hazards models none of the following developmental or economic indicators are significant predictors of entry to the treatment: *total revenue per capita, total state debt outstanding per capita, total expenditure per capita,* or *total unemployment compensation expenditure per capita.*[45] Nor does it appear that variation in federal transfers affects entry to the treatment: *total federal intergovernmental revenue per capita* is insignificant as well. Second, I test whether covariates that capture a state's law enforcement capacity predict entry. Because PL280 was first and foremost about criminal law, and civil law was an "afterthought," state-level decisions to adopt PL280 in the area of civil law might have been influenced by law enforcement capacity more broadly.[46] Helpfully, none of the following law enforcement-related covariates are significant in bivariate analyses: *total expenditure on public safety per capita, total corrections expenditure per capita, total judicial expenditure per capita, total police protection expenditure per capita*, or *total prison population.*

However, two relevant covariates are significant predictors of entry to the treatment in bivariate models. The first, *state income per capita (logged)* has a sizable, positive effect on entry.[47] Thus, states home to more wealth are more likely to enter the treatment. Second, *Indian population per capita (in state)*, available from the decennial Census, scales American Indian population by state population as a proxy for Indian political presence in state politics.[48] The hazard ratio is significant and extremely close to zero, suggesting that states with greater concentrations of American Indians are less likely to enter the treatment.[49] This makes sense, as states with many tribes are also those western states that achieved statehood after 1881. It is also the case that states with larger American Indian populations get more federal transfers specifically related to Indian affairs, which could affect the state's capacity to enact PL280.[50] Further, the population

[45] Data from the US Census State Government Finances and the US Statistical Abstract, various years. Consistent state-level unemployment rates begin in 1976; this is not a significant predictor (Bureau of Labor Statistics).

[46] Recall that not all states that adopted PL280 in the area of criminal law adopted it in the area of civil law. Determining adoption of criminal provisions is outside the scope of this paper. Nonetheless, these tests explore whether factors associated with criminal law affected entry to the civil law treatment.

[47] Hazard ratio: 60.92, p=0.01, for 32 subjects, 16 failures, and 1281 at-risk observations. Data from US Census State Government Finances. There are no regional measures of GDP per capita prior to 1963 (Bureau of Economic Analysis). The correlation between state GDP per capita and income per capita from 1963 to 2008 is 0.8.

[48] Evans 2011*b*. *Recognized tribes (count)* is not a significant predictors of entry.

[49] Hazard ratio: 1.50*10^-33, p=0.08, for 32 subjects, 16 failures, and 1249 at-risk observations.

[50] Nonetheless, only one Department of the Interior grant, in 1955, assisted law enforcement on one Oregon reser-

of American Indians in the state could affect levels of assimilation, which could affect entry into the treatment – per President Truman's rationale.[51] Given these variables' significance in simple bivariate analyses, I include them as necessary controls for PL280 and its roll-out to reach quasi-natural experimental status.[52] In the Appendix, I show that results are robust to models including all potentially related but insignificant state-level variables considered in these tests.

What about possible unobserved factors that might not be plausibly exogenously distributed across treated and untreated states? Here, I bring qualitative evidence to bear.[53] To the extent that roll-out states have a systematic motivation for opting-in, I expect them to continue to seek to address "lawlessness" on reservations. Those states opting in to the treatment may have more "lawless" reservations, which in turn would plausibly be associated with worse (rather than better) developmental outcomes and thus a challenging source of bias. Nonetheless, if PL280 clearly solved "lawlessness," it could be that states would opt in to the treatment even if their problems were not particularly severe. It could also mean that tribal members would be willing to move across state lines to find safer communities. However, we have evidence that PL280 did not solve "lawlessness" problems in mandatory states. Goldberg-Ambrose (1997) documents that mandatory states did not increase appropriations for law enforcement on reservations despite PL280 being an unfunded mandate.[54] As a result, the withdrawal of federal Bureau of Indian Affairs police left legal vacuums on reservations. For example, the Winnebago reservation in Nebraska was left with no law enforcement personnel whatsoever, as the state did not allocate any officers to it. Even by the 1970s, the reservation had only poor police coverage.[55] In fact, the Santee Sioux Nation and the Bois Forte Band of Chippewa retroceded from PL280 exactly because state criminal law enforcement was ineffective.[56]

One last complication: the Santee Sioux, Bois Forte, and 36 other tribes have petitioned at

vation (Goldberg-Ambrose 1997: 57).

[51] I thank a reviewer for this point.

[52] Both variables are significant when included in a multivariate model, although both fail a proportional-hazards test. When time-varying covariates are added, no variable achieves statistical significance.

[53] Dunning 2012: 326.

[54] Federal appropriations did not increase either; see again footnote 52.

[55] In 1957, the Nebraska governor demanded that the BIA take back jurisdiction. As that was not possible under PL280, Nebraska eventually set up special deputy sheriffs for reservation areas (Goldberg-Ambrose 1997: 57, 103).

[56] Interview, Chairman Trudell, Santee Sioux Nation, June 2015. Under PL280, only a handful of state troopers were responsible for an area larger than the state of Rhode Island, including the Bois Forte reservation. Interview, Chairman Leecy, Bois Forte Band, June 2015. Note that if PL280 in fact increases crime on Indian lands, we are unlikely to find that it has positive developmental effects (Dimitrova-Grajzl, Grajzl and Guse 2014).

different times to get themselves excluded from the civil law mandate in PL280 and its roll-out (see Table 1D). These tribes, unlike other tribes in their states, maintain tribal civil jurisdiction on their reservations and thus must be considered in the research design. Exemption or retrocession from PL280 and roll-out legislation is difficult, often taking decades of effort. Before enactment, tribes had to petition Congress or their state legislature to be exempted; after enactment, tribes have had to follow a complex process in order to show that they have strong law-and-order institutions and, in particular, strong tribal police and criminal justice institutions.[57] In other words, a few tribes with very strong institutions are the ones that have opted out from the state civil law treatment, and the demonstrated strength of retroceded tribes' institutions is a challenging source of bias. Finally, federal legislation allows tribes to opt-in to state civil law. However, no tribe has chosen to do so. In the framework here, tribes have opted out of but not into a treatment that is expected to cause better individual-level development outcomes.

[Table 1D about here.]

Effects of Variation in Civil Law: American Indian Housing

What, if any, effects does the variation in PL280 outlined in the previous section have on tribal members' well-being? I focus on tribal members' access to affordable housing as an important, individual-level outcome key to economic well-being. Obtaining housing on reservations incurs particular challenges. Much reservation land is held in trust by the US government, for the benefit of the tribes, but that land cannot be mortgaged. Since privately held (or "fee simple") land exists in a "checkerboard" patchwork across many (but not all) reservations, assessing whether land can or cannot be mortgaged is an onerous process. Thus, home lending has historically been underprovided for American Indians and reservation residents in particular. Studies including Cyree, Harvey and Melton (2004) and Dimitrova-Grajzl et al. (2015) find that poor economic conditions on reservations lead lenders to hold on-reservation borrowers to even higher standards than other applicants.[58] One consequence is that mobile homes are common on reservations, since

[57] To speed up the process, the Santee Sioux adopted Nebraska's criminal code lest the state legislature find fault with their own formulations. It still took them from the 1980s to 2006 to officially retrocede from PL280. Interview, June 2015. The Menominee petitioned but failed to be exempted from PL280 in 1953 and did not retrocede until 1976. For a call to ease the constraints on retrocession, see Anderson 2012.

[58] Cyree, Harvey and Melton (2004) also find that Indian applicants have been rejected from government housing guarantee programs at higher rates than non-Indian applicants.

they can physically be seized and thus better act as collateral.

The Section 184 Indian Home Loan Guarantee Program, established by Congress in 1992, intends to help with these problems. Section 184 loans are available for enrolled tribal members, whether they live on or off of reservations.[59] The program is intended to prevent predatory lending and offers very loan favorable terms.[60] Loans can be used for the purchase or refinancing of primary residence homes (whether in single, double, triple, or four-unit buildings). Anecdotally, lenders, borrowers, and tribal leaders have been happy with the program.[61] Section 184 loans began in 1996; by the end of 2013, nearly $4 billion in loans were made to individuals in 37 states. I gained access to data on 23,567 loans (1996–2013).[62] Some data has been withheld under FOIA Exemption 6: loan guarantee fee dates, fee amounts, and certain types of loans.[63] The resulting novel dataset includes a maximum of 20,181 loans made with regard to land for which the individual can and does hold title and control of the property ("fee simple"). Interest rates range from 2.25 to 9.63 percent, with a mean of 5.00 percent.[64] Sixty percent of loans were made to tribal members in untreated states and 30 percent to members in treated states. This tracks with the overall distribution of tribal members: 62 percent (1.22 million) of American Indians living on or near reservations live in untreated states. The most loans have been made to residents of Oklahoma (untreated), followed by Alaska (treated), Arizona (untreated), and California (treated). See Appendix Figures A1, A2, and A3 for the distribution of addresses on and off reservations in PL280 mandatory, roll-out, and untreated states. The data have time-series but not panel properties.

In case of default, the lender must follow the applicable civil law to foreclose on a Section 184 home. HUD notes explicitly that tribes are responsible for implementing "foreclosure, eviction, lien,

[59] Put differently, Section 184 does not interfere with the treatment, because it alters the likelihood of a mortgage uniformly across all states.

[60] These include, as of 2014: 2.25 percent down payment on loans over $50,000; 1.25 percent on loans under $50,000. A one-time 1.5 percent up front guarantee fee is paid at closing, which can be financed into the loan. Loans with a loan to value of 78 percent or greater are subject to an annual 0.15 percent mortgage insurance premium. Section 184 loans cannot be used for Adjustable Rate Mortgages.

[61] In 2012, the program was so popular that HUD was forced to abruptly suspend the program for five weeks, due to a shortage of funding. Letter to tribal leaders, Office of Public and Indian Housing, HUD.

[62] FOIA Control No.: 14-FI-HQ-01570. The data record four loans that were made in 1995. Unfortunately, the program is so recent that I cannot exploit over-time pre- and post-treatment variation.

[63] Redacted types include: allocated/individual trust, tribal trust, assignment, leasehold, and restricted fee. Section 184 gets around the problem of trust land, because the borrower only leases the land from the tribe for 50 years, meaning that the home and the leasehold interest (and not the land) are mortgaged. With the assumption that borrowers on trust lands (backed by the US government) and tribally owned lands (backed by the tribe as a whole) would receive better interest rates than individually owned land, these redactions are a challenging source of bias.

[64] In 6 instances, the interest rate is recorded as 0. Results are robust to including or dropping these observations.

and leasing procedures."[65] As such, HUD requires either that "the tribe has adopted procedures ensuring that the Federally guaranteed or insured will always have first lien priority...OR has adopted legislation requiring the tribe to follow state or local priority of lien procedures."[66] In the first case, the tribe has sovereignty over its civil law but makes a commitment regarding lien priority; in the second case, the tribe is governed by PL280 and its roll-out. The expectation here is that the enforcement of lien procedures under tribal civil law, when the tribe's commitment is not made under US state law, is more costly.[67] Enforcement costs are lower when the lender must deal with only one legal system, particularly when that legal system is the same as the one governing the lenders' other business. In that case, the lender has the experience, human capital, and paperwork to undertake enforcement proceedings in a routine manner. In contrast, dealing with a tribal legal system – whatever the quality of that legal system – carries extra costs.

The Section 184 program is attractive from a lender's point of view, because the Office of Loan Guarantee within HUD's Office of Native American Programs guarantees these loans 100 percent. The 100 percent guarantee means the magnitude of any effect of PL280 on individuals' loan terms is minimized. From an identification point of view, the guarantee offers precision in interpreting the cause of variation in loan terms. If the lender will be repaid in either case, then differences in loan terms (net of other determinants) reflect differences in enforcement costs.

Analysis

While Section 184 borrowers must be enrolled members of a federally recognized tribe, the homes they are mortgaging may be located on or off of a reservation. If the mechanism at play is really the lower costs of enforcing contracts on reservations with state civil law, then it should be borrowers mortgaging homes on reservations that account for differential loan terms.[68] Thus, the key covariate of interest is an interaction between *state law (PL280)* and *home on reservation*, and I expect a

[65] "Section 184 Loan Processing Requirements on Trust Land," slide 12. BIA Mortgage Lending on Tribal Trust Land Presentations, 19 April 2012.

[66] "Preparing Clients for Homeownership," slide 8. BIA Mortgage Lending on Tribal Trust Land Presentations, 19 April 2012. Capitalization in original. Available at: https://portal.hud.gov/hudportal/HUD?src=/states/shared/working/r10/nwonap/biaagenda.

[67] HUD explicitly states that "if eviction and foreclosure procedures are not enforced, the Department will cease making new loan guarantees within the tribe's area of jurisdiction." FAQ - Section 184. https://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/homeownership/184/faq, accessed March 2017.

[68] The prevailing legal regime is defined by the location of the property, not the identity of the borrower.

negative and significant effect on the dependent variable, the interest rate on the home loan.[69] In the data, 55 percent of borrowers have addresses on a reservation.[70]

If PL280 and its roll-out were a true natural experiment, a difference-in-means test across treated and untreated states would be sufficient to show effects. Analyzing the data naively like this, untreated borrowers with addresses on reservations pay significantly higher interest rates in all but four‘ years (see Figure 1). Effect sizes range from 0.03 to 1.8 percent. However, this analysis does not account for predictors of entry into the treatment. Nor does it account for the fact that interest rates vary over time and space in endogenous ways that could be misinterpreted as being a result of the treatment.

[Figure 1 about here.]

The models in Table 2 control for the two state-level predictors of entry to the treatment, *state income per capita (logged)* and *Indian population per capita (in state)*. As such, I presume that variation in state law is as-if random given these controls. I add three additional covariates that, while unrelated to entry to the treatment, could vary in nonsystematic ways across home loan interest rate observations in treated and untreated states. The first is the *distance to metro area*, calculated as the (logged) number of miles between the borrower's home address and the closest border of one of the 381 US statistical metropolitan areas.[71] Geography could matter if, for example‘ borrowers closer to urban areas can access capital more cheaply, thanks to a cultural environment more similar to that in neighboring municipalities or access to more competitive lending. The next are the 15- and 30-year locally prevailing mortgage interest rates in the week each loan was made, using data from the Freddie Mac Primary Mortgage Market Survey (PMMS). PMMS data varies by region, which controls for the local availability of credit and effect that local

[69] *Home on reservation* is based on US Census TIGER/Line Shapefile, 2012, Current American Indian/Alaska Native/Native Hawaiian Areas (AIANNH) National Shapefile.

[70] 68 percent of untreated borrowers live on reservations, and 25 percent of treated borrowers live on reservations. Does the choice to buy a home on or off of a reservation vary with the treatment? One implication of the hypothesis tested here is that borrowers in treated states should be more likely to buy homes on reservations, all else equal. Thus, we would expect the converse of what is observed (i.e., that the percent of on-reservation borrowers in treated states would be higher than in untreated states). In fact, all else is not equal between on-reservation and off-reservation housing (e.g. Dimitrova-Grajzl et al. 2015). Tribes today put a significant amount of effort into upgrading their on-reservation housing stock. In models with a full battery of covariates, I rely on loan-level measures, distance to a metro area, and lender dummies to proxy for individual-level variation in the kinds of borrowers that choose to buy housing on- or off-reservation.

[71] Statistical metropolitan areas have at least one urban area of at least 50,000 people and extends over land that has strong commuting ties to that core. In 76 percent of observations the borrower's address is within a statistical metropolitan unit.

economic health has on rates offered to tribal borrowers.[72] Year dummies account for national-level time trends. Additionally, the 34 borrowers living on reservations that have retroceded or been exempted from PL280 are excluded from the treatment (see again Table 1D).[73] Because the treatment is at the state level, standard errors are clustered by state.

[Table 2 about here.]

In Table 2, the direct effect of *state law (PL280)* is negative but not significant. The interaction with *home on reservation* is negative and significant as expected: treated borrowers benefit from -0.18 to -0.16 improvements in interest rates (Models 2 and 3). Figure 2 displays the marginal effect of the interaction term in Table 2, Model 3: the predicted interest rate is significantly lower when a borrower is governed by state law and has a home on a reservation (with other covariates held at their means). Covariates that reach significance in Model 3 behave as expected: the direct effect of living on a reservation is positive and significant, but note that the magnitude is only 0.05 and thus does not swamp the magnitude of the interaction effect.[74] Additionally, borrowers get lower interest rates in states with greater American Indian population density, and higher regional interest rates track with higher rates for borrowers in the sample.

[Figure 2 about here.]

Suppose the reader remains unconvinced that PL280 and its roll-out approximates a quasi-experimental design, such that individuals are not as-if randomly distributed across the treated and untreated groups (conditional on the covariates included in Table 2). In that case, I turn to analyses that include a battery of covariates that could affect loan availability and individual creditworthiness. Perhaps most importantly, I include dummies for both the *originating lender* (260 banks) and *servicing lender* (141 banks) for each loan. Table 3 breaks down lender participation by region, to highlight the granularity offered by both the total number of lenders and average observations per lender-region.[75]

[Table 3 about here.]

Lender dummies are important, first, because they allow me to control for otherwise

[72] The five regions are North Central, Northeast, Southeast, Southwest, and West.

[73] 236 borrowers are dropped because they are members of state-recognized but not federally recognized tribes and thus cannot be treated, and the 6 observations where the interest rate is recorded as 0 are dropped.

[74] The positive direct effect of living on a reservation is consistent with Dimitrova-Grajzl et al. (2015).

[75] Note that the lowest population of American Indians is in the Northeast region and the greatest is in the Southwest and West. Regions are as defined by the Freddie Mac Primary Mortgage Market Survey (PMMS).

difficult-to-measure reservation- or tribal-level characteristics that are either poorly recorded or kept confidential by tribes.[76] I expect the qualities of available lenders to vary with factors such as wealth on the reservation, demand for business lending, natural resource endowment, and gaming.[77] Moreover, because lenders vary in their willingness to take on risk, lender dummies can do more than proxy for average individual-level effects of such aggregate factors. For example, originating or servicing lenders that cover a wide geographic area may be willing to take on more risk because they can better diversify their portfolio in other ways. Thus, identifying off of within-lender over-time variation addresses concerns about both local factors and how local factors are realized in a particular individual's riskiness as a borrower. In particular, identifying off of variation among a lender's clients is useful in isolating the hypothesized mechanism as one of enforcement costs rather than, say, income effects.[78] That said, perhaps the biggest lender has the human capital, infrastructure, and experience to negate enforcement costs. Of course, if all of a lender's competitors are charging a premium, then the biggest lender has little incentive to change its prices. Nonetheless, for robustness I restrict the sample to only clients of Wells Fargo, the most common originating and servicing lender (about 17 percent of observations).

The data also include fine-grained individual-level covariates about each loan, which are the best FOIA-available proxies for individual creditworthiness.[79] Loan characteristics are more useful than indirect proxies for creditworthiness, such as a borrower's demographic characteristics.[80] In particular, I control for whether the borrower has a *coborrower*, and whether the loan is for *refinance* as opposed to home purchase. I also control for the the *loan amount (logged)*, and the *loan term (in months)*, which capture characteristics of the borrower (and within-lender variation in loan resources, per the lender dummies). Given that lenders may trade off across an interest rate, loan amount, and loan term, it is important to demonstrate results both with and without these potentially post-treatment covariates in the model. Still, including these covariates speaks to the

[76] For example, the Section 184 data associate 605 tribal affiliations with borrowers, though there are 567 recognized tribes.

[77] Lender availability itself varies with the remoteness of a reservation, underscoring the importance of including *distance to metro area*.

[78] Considering PL280 to be a true natural experiment, Anderson and Parker (2008) find that treated tribes have higher income per capita. Might income effects in treated states so great that high-income potential borrowers select out of Section 184? If so, an effect of PL280 on realized Section 184 borrower interest rates would be muted.

[79] Individual credit scores and incomes are confidential and thus unobservable.

[80] The Equal Credit Opportunity Act (1982) requires lenders to extend credit to all credit-worthy customers "without regard to race, sex, religion, color, age, or national origin."

enforcement cost mechanism by controlling for the resources each borrower is putting toward the home purchase. Finally, potential selection effects suggest a methodological reason to control for borrower quality at the individual level. Knowing the poor terms available to them, lower-quality untreated borrowers may disproportionately select out of the Section 184 program. Thus, variance in borrower quality could be different across the treatment groups.[81]

The reader might worry that a particular modern institution – gaming on reservations – endogenously affects borrowers' interest rates, if it affects the distribution of creditworthy borrowers across the treatment groups.[82] Methodologically, lender dummies and fine-grained covariates about actual loans help account for the impact of reservation-level gaming on the kinds of lenders and the kinds of terms available to an individual. Still, I include the count of American Indian *casinos* by state as reported by the National Indian Gaming Commission in 2013 as the best available proxy for gaming, since tribes exercise their sovereignty by keeping fine-grained data about gaming private.[83] However, note that the analysis in Cookson (2010) suggests that the *casinos* covariate might be post-treatment: treating PL280 as a true natural experiment, that article finds that treated tribes are more likely to have casinos.

Results are in Table 4. In all five models, borrowers with a *home on reservation* and under *state law* benefit from lower interest rates, of a magnitude of about -0.07 to -0.2. Again, this is in contrast to the significant, positive, but smaller direct effect of *home on reservation*. Additionally, borrowers that are refinancing receive better rates, as do borrowers that take out bigger loans. *Casinos* are associated with higher rates. Results of interest are robust when the sample is cut to only include Wells Fargo clients (Model 5), which implies that the presence of additional enforcement costs around untreated borrowers affects prices even at the biggest lender.

[Table 4 about here.]

Table 5 provides a robustness check using nearest-neighbor matching. The model matches on the full battery of covariates in Table 4, Model 4, and it matches exactly on *home on reservation*.

[81] Might savvy borrowers move across state lines in order to access more favorable loan terms? The quasi-experimental approach that includes individual-level covariates help with the worry that such borrowers differ systematically from others and are not as-if randomly distributed. Nonetheless, tribal members (like all of us) have social and cultural attachments to their homes that we might ex ante expect to be stronger than the counterweight of interest rate differentials

[82] On tribal gaming, see Hansen and Skopek 2011.

[83] "Gaming Tribe Report," National Indian Gaming Commission, updated 11 February 2014. Unfortunately, this covariate is available only as a cross-section and not as a panel.

A minimum of 4 matches are required, and standard errors are robust. The average treatment effect on the treated is significant although smaller in magnitude, at -0.05.

[Table 5 about here.]

The effect size in these analyses varies between about a -0.05 or -0.2 difference for treated borrowers on their home loan interest rate. In the data, the mean home loan amount is $169,000.[84] For this amount, over the course of a 15-year mortgage, those governed by tribal civil law would pay between $670 and $2688 more. Over the course of a 30-year mortgage, those governed by tribal civil law would pay between $1401 and $11,136 more. Are these effect sizes large or small? As suggested by the mean home loan amount, Section 184 loans are regularly used for modest homes. That state law can cheapen these borrowers' costs demonstrates a meaningful cost to tribal civil law. And, given that these effect sizes exist even within a population of loans that are 100 percent guaranteed by the US government, we can imagine that disparities would be larger in non-guaranteed loans.

Nonetheless, these costs on average add up to at most an additional $371 per untreated borrower per year. Thus, while there is an individual-level cost to tribal law, opponents of PL280 would likely cheer this result. For example, this result pales in comparison to the 30 percent difference in GDP per capita (1969-1999) that Anderson and Parker (2008) attribute to PL280 while considering it a natural experiment. Further, studies have long documented persistent racism against American Indians in credit markets.[85] It is surely wishful thinking that the magnitude of the effect of being a treated tribal borrower, estimated here, would offset the multiple sources of disadvantage facing a tribal borrower versus a non-American-Indian borrower.[86] The effect estimated here suggests limits on both the downside and the upside of adopting the treatment.

In fact, tribes and their members that value sovereignty may be willing to knowingly maintain institutions that generate individual-level premiums – especially relatively small premiums. In the next section, I consider extensions to these results and draw on qualitative evidence to provide contemporary tribal perspectives that, for at least some tribes, such an individual-level "tax on

[84] The mean is lowest in 1998 ($97,900) and highest in 2013 ($180,200). Recall that year dummies are included.

[85] E.g. Cyree, Harvey and Melton (2004), Dimitrova-Grajzl et al. (2015). Unfortunately, these studies do not generate dollar-amount estimates of effect sizes. Dimitrova-Grajzl et al. (2015) find an association between PL280 and consumer credit, measured by Equifax Risk Scores and delinquency rates, though (as they note) their analysis is not based on a causal identification strategy (and it de facto treats PL280 as a true natural experiment).

[86] In fact, because lenders may increasingly select out less worthy borrowers over time, we cannot say for certain that the Section 184 program is reducing inequality among American Indians.

sovereignty" can be acceptable.

Extensions

Here, I exploit additional data on Section 184 loan defaults and Section 184 loan limits.[87] I also draw on qualitative data to shed light on how some contemporary tribes manage tradeoffs between sovereignty and housing access.

The Section 184 program has dealt with 665 defaults (foreclosures) from 1996 through 2013.[88] More of these took place in untreated states (409) than in treated states (256). This is consistent with the expectation that borrowers default more often when the law makes lenders more uncertain about (and thus increases costs of) obtaining restitution.[89] However, the proportion of defaults in untreated states is roughly equal to that in treated states (3 v. 4 percent). This more compelling statistic suggests that Section 184 lenders are "correctly" pricing mortgages in untreated states so as to compensate for increased risks of default.

That lenders prefer Indian borrowers under state civil law suggests that lenders should be willing to lend more to those borrowers and that the US government should be willing to guarantee larger loans for those borrowers. HUD issues upper limits for the size of Section 184 loans for counties or census areas where the program is available. I use the 2013 upper limits to test whether tribal borrowers in PL280 and roll-out states have access to systematically more guaranteed loan funds. In Table 6, the dependent variable is the *guaranteed loan limit* for a single-family home in designated areas (roughly similar to small groups of counties). Model 7 controls for *state income per capita (logged)* and *Indian population per capita (in state)* as determinants of entry into the treatment.[90] As expected, the guaranteed loan limit is significantly higher in areas governed by

[87] In the Appendix, I demonstrate that a related US federal program does not mitigate PL280's effects. I also consider the influence of other property rights issues on reservations (i.e. "checkerboarding").

[88] FOIA Control No.: 15-FI-HQ-1317. Unfortunately, the data do not show whether a foreclosure took place at an on- or off-reservation address.

[89] Again, the contention is that foreclosing on homes in untreated states is more difficult simply because the lender must navigate two legal systems, whatever the quality of tribal institutions.

[90] The assumption here is that tribal-level characteristics relevant to loan limits are as-if randomly distributed across treated and untreated groups (conditional on the predictors of entry into the treatment). Unfortunately, the 1881 areas are not coterminous with tribal populations – in some cases, members of multiple tribes live on the same reservation, and in others, multiple reservations are present in a given area. Thus, I do not drop the as-if random assumption and include tribal- or reservation-level covariates. It is notable, however, that nothing about eligibility for the Section 184 program is contingent on the source of a borrower's tribal membership; a borrower must simply be a member of a recognized tribe. For example, in the original FOIA-requested data, the borrower's tribe is not standardized: the data list 605 categories (although only 567 recognized tribes exist).

state law.[91]

[Table 6 about here.]

While they may not be aware of systematic differences borrowing costs across treated and untreated reservations, many Indian leaders have "heard it before" that property rights protections matter for development.[92] Loan officers in (untreated) North Dakota admit "great reluctance" in making loans to Indians on reservations, with several saying they think of these as unsecured "character loans" since collateral on the reservation is difficult to recover.[93] According to the president of the North Dakota Collectors Association, "Certainly many millions of dollars in debts are going uncollected, and Indians are not getting the credit they might otherwise."[94]

Two tribes that retroceded from PL280, the Santee Sioux Nation in Nebraska (2006 retrocession) and the Bois Forte Band of Chippewa in Minnesota (1975 retrocession), have had experience both under the treatment and now with tribal sovereignty restored. Based on the analyses here, retrocession suggests that their members are likely to have exacerbated trouble accessing capital for home ownership. While it is difficult to say whether these tribal members' problems are in fact more severe than others', both tribes recognize a pressing shortage of housing for members. Interestingly, they have taken steps to rectify this shortage outside of traditional US financial markets. The Bois Forte Band, which itself has borrowed from other tribes, opened a tribal credit union in 2013 with long-term plans to provide subsidized home financing.[95] The Santee Sioux government issues partial waivers of sovereign immunity to borrow from non-Indian banks, uses those funds to build homes on tribal trust land, and then leases those homes to tribal members at rates based on members' incomes.[96] In this way, the tribe absorbs any systematic premium in market interest rates and offers its members what it considers fair rates. These two examples demonstrate that tribes can find creative ways to lower the cost of borrowing for tribal members, even under conditions of tribal civil law.

With the Bois Forte and Santee Sioux experiences in mind, this article does not demonstrate that the imposition of state, rather than tribal, civil law is the best or the only way to improve

[91] Results are consistent for the loan limits on duplex, triplex, and fourplex properties.
[92] Interview, Chairman Kevin Leecy, Bois Forte Band of Chippewa, June 2015.
[93] Trentadue 1987/1988: 45.
[94] Trentadue 1987/1988: 46.
[95] Interview, June 2015.
[96] Interview, Chairman Roger Trudell, June 2015. The Santee Sioux government has also occasionally borrowed from other tribes.

individual Indians' access to housing or to capital more broadly. Perhaps tactics that work around external lenders' reluctance to engage with tribal law can provide stable, quasi-market solutions. This article does suggest that opting into state civil law is one means to lower tribal members' borrowing costs. What is more, it is relatively cheap, given that it requires adopting existing institutions rather than developing new legal codes, social programs, or complex lending structures. Just how cheap it is, however, depends on one's valuation of sovereignty.[97] Given American Indian tribes' troubled history in maintaining their sovereignty, it is not surprising that tribal leaders may be willing to forego potential individual-level economic benefits of reduced sovereignty in favor of nation-building goals – especially when those benefits are relatively small. Explaining that "we don't have ordinary economics on this reservation," one elected leader in the Santee Sioux tribe put it clearly: "We aren't here for individual well-being; we are here for a large group of people."[98] This tribe's central worry is that by "slicing" sovereignty, the tribe opens itself up to challenges against its sovereign rights to undertake other activities – like gaming. In this tribe's evaluation, the social and economic returns to sovereignty at the tribal level outweigh any temptation to opt in to state civil law. At minimum, this article suggests future research into the extent to which "institutionally disadvantaged" sovereign nations recognize that disadvantage and the strategies they use to (partially) overcome disadvantage, whether by surrendering (some) sovereignty or otherwise.

Conclusion

Roughly similar to very small developing countries, American Indian tribes are looking to balance economic development and their own traditions. Tribes navigate the space allowed to them, to both benefit from and push back against state and federal governments.[99] As particularly impoverished nations, non-Indian capital is crucial to economic well-being. For capital-poor developing countries, externally interpretable, stable property rights improve borrowing costs. This article uses a quasi-natural experiment to show that the same holds for Indian tribes. Moreover, this

[97] It also depends on whether opting in to some institutions will weaken others, as some have argued has historically been the case with PL280 and criminal law enforcement (Goldberg-Ambrose 1997).

[98] Interview, Tribal Council member, Santee Sioux Nation, June 2015.

[99] Evans (2014) makes a powerful call to study tribes as important political entities (see also Bays and Fouberg 2002, Deloria and Lytle 1984). For tribes' contemporary political strategies, see Cramer 2005, Evans 2011*b*.

article demonstrates this effect at the individual level, using novel data: borrowers governed by the civil law of the US state enjoy lower interest rates on mortgages than borrowers governed by their own tribe's civil law. Effects manifest even in a dataset of loans that are 100 percent guaranteed by the US government. Nonetheless, small effect sizes suggest that the cost of sovereignty can in reality be low.

Adopting state civil law would be a straightforward way for a given tribe to avoid the costs of maintaining its own civil legal sovereignty. But the quasi-natural experiment that brought state civil law to some tribes was the "termination era" policy PL280, part of a bigger push to eliminate the reservation system. Clearly, if adopting state civil law leads to termination and losing all sovereignty, advantageous borrowing costs are far from a compelling reason to give up legal jurisdiction. While federal Indian policy has since shifted away from termination, maintaining and reinforcing sovereignty remains a much-prioritized goal for Indian tribes. Indeed, state civil law has been imposed only through coercion and no tribe has voted to adopt it.

What this article offers is a quantification of a possible benefit of giving up civil legal jurisdiction. In so doing, the hope is not only to contribute to our understanding of law and finance, but also to provide information on the costs of sovereignty for decision-makers tasked with development.

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Figures

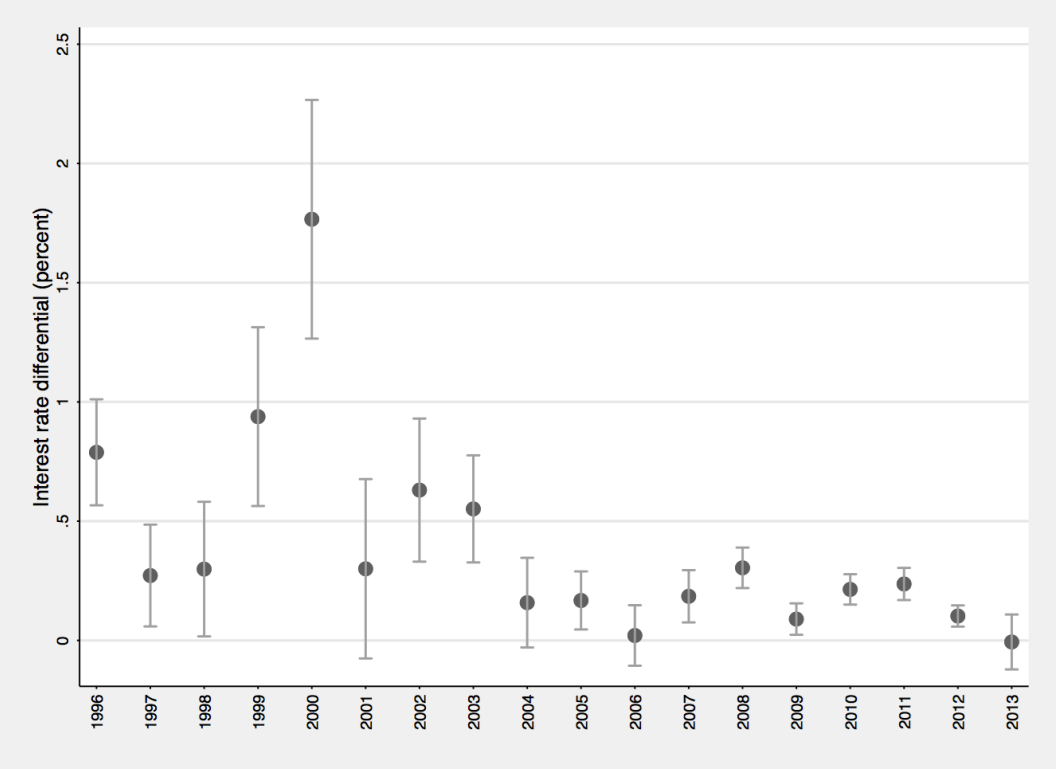

Figure 1: Tribal law v. State law t-test results, by year (95% confidence intervals)

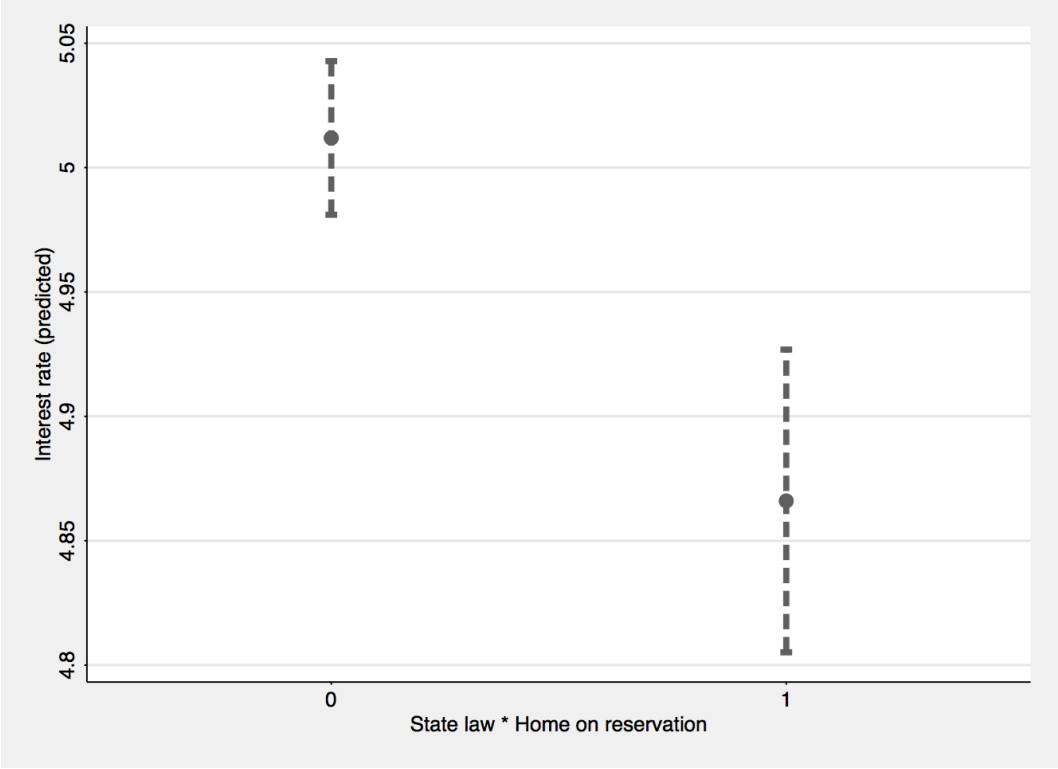

Figure 2: Marginal effect, *State law * Home on reservation* (Table 2, Model 3, 95% confidence intervals, other covariates held at means)

Tables

Table 1a: PL280 Mandatory States

State	No. of tribes*
Alaska	1^
California	107
Minnesota	11
Nebraska	6
Oregon	10
Wisconsin	11

* Number of federally recognized tribes as of 2015.
^ Alaskan Native Villages have separate legal status.

Table 1b: Roll-out Adopters of PL280 or Analogous Statutes

State	No. of tribes*	Year enforced
Colorado	2	1984
Connecticut	2	1983
Florida	2	1961
Iowa	1	1967
Maine	4	1980
Massachusetts	1	1987
Nevada	19	1967
New York	7	1950
Rhode Island	1	1978
Texas	3	1987
Utah	7	1980

* Number of federally recognized tribes as of 2015.

Table 1c: States with Tribal Civil Jurisdiction

State	No. of tribes*
Alabama	1
Arizona	21
Idaho	4
Kansas	4
Louisiana	4
Michigan	12
Mississippi	1
Montana	7
New Mexico	23
North Carolina	1
North Dakota	4
Oklahoma	37
South Carolina	1
South Dakota	9
Washington	29
Wyoming	2

* Number of federally recognized tribes as of 2015.

Table 1d: Tribes Excluded or Retroceeded from PL280 and Roll-out

State	State Status	Tribe (year of exclusion)
Minnesota	PL280 mandatory	Red Lake (1953), Bois Forte (1975)
Nebraska	PL280 mandatory	Omaha (1970), Winnebago (1986), Santee Sioux (2006)
Oregon	PL280 mandatory	Warm Springs (1953), Umatilla (1981), Burns Paiute (1979)
Wisconsin	PL280 mandatory	Menominee (1976)
Colorado	Roll-out	Ute Mountain (1984)
Connecticut	Roll-out	Mohegan Nation (1983-1993)
Maine	Roll-out	Aroostook Band of Micmancs (1980-1990)
Nevada	Roll-out	Retrocession for 18 tribes (by 1975), Ely Colony (1988)
Texas	Roll-out	Kickapoo Traditional Tribe (1987)
Utah	Roll-out	Goshute, Navajo, Shoshoni, Skull Valley Band of Goshute, Ute, Ute Mountain (all in 1980)

Total: 38 tribes. As of 2015.

Table 2: State Law and Interest Rates, Quasi-experimental Approach (1996-2013)

Dependent variable: Interest rate (2.25 to 9.63)			
	Model 1	**Model 2**	**Model 3**
State law (PL280)	-0.111	-0.057	-0.006
	(0.076)	(0.070)	(0.053)
Home on reservation	-0.015	0.025	0.051**
	(0.022)	(0.016)	(0.024)
State law * Home on reservation		-0.150***	-0.146***
		(0.038)	(0.030)
Income per capita (logged, in state)			-0.320
			(0.232)
Indian pop. per capita (in state)			-0.884**
			(0.326)
Distance to metro area (logged, miles)			0.001
			(0.003)
Regional 15-year interest rate			0.836***
			(0.015)
Regional 30-year interest rate			0.806***
			(0.012)
Year dummies	Yes	Yes	Yes
Constant	8.487***	8.492***	5.425**
	(0.161)	(0.166)	(2.315)
Observations	20136	20136	20118
States	33	33	33
R-squared	0.85	0.85	0.90
Robust standard errors clustered by state, *** p<0.01, ** p<0.05, * p<0.1.			

Table 3: Lenders Participating in the Section 184 Program, by Region

	Originating Lenders		**Servicing Lenders**	
Region	*Count*	*Obs/Lender*	*Count*	*Obs/Lender*
North Central	43	40	30	57
Northeast	5	19	8	12
Southeast	21	30	17	37
Southwest	137	82	86	131
West	138	47	80	81

Note: Regions defined by Freddie Mac PMMS.

Table 4: State Law and Interest Rates with Additional Covariates (1996-2013)

Dependent variable: Interest rate (2.25 to 9.63)					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
State law (PL280)	-0.034	-0.034	-0.004	-0.010	0.037
	(0.031)	(0.031)	(0.021)	(0.020)	(0.028)
Home on reservation	0.057***	0.057***	0.040***	0.029**	0.127***
	(0.013)	(0.012)	(0.013)	(0.012)	(0.035)
State law * Home on reservation	-0.098***	-0.100***	-0.089***	-0.072***	-0.189***
	(0.014)	(0.015)	(0.014)	(0.014)	(0.027)
Income per capita (logged, in state)	-0.171	-0.159	0.050	-0.083	0.040
	(0.129)	(0.129)	(0.106)	(0.093)	(0.110)
Indian pop. per capita (in state)	-0.449*	-0.434*	-0.428*	-0.488***	-0.627***
	(0.255)	(0.254)	(0.217)	(0.126)	(0.159)
Distance to metro area (logged, miles)	0.002*	0.002**	0.000	0.001	-0.004***
	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Regional 15-year interest rate	0.834***	0.836***	0.821***	0.821***	0.758***
	(0.016)	(0.015)	(0.019)	(0.019)	(0.031)
Regional 30-year interest rate	0.805***	0.802***	0.800***	0.799***	0.745***
	(0.012)	(0.012)	(0.013)	(0.012)	(0.021)
Originating Lender dummies	Yes	Yes	Yes	Yes	Yesˆ
Servicing Lender dummies	Yes	Yes	Yes	Yes	Yesˆˆ
Coborrower		-0.013	0.006	0.006	0.026*
		(0.014)	(0.008)	(0.008)	(0.013)
Refinance		-0.055***	-0.044***	-0.044***	-0.004
		(0.015)	(0.012)	(0.012)	(0.022)
Loan term (logged, months)			-0.023	-0.019	0.057
			(0.054)	(0.055)	(0.145)
Loan amount (logged)			-0.104***	-0.103***	-0.109***
			(0.030)	(0.029)	(0.039)
Casinos (count, state, 2013)				0.001**	0.001**
				(0.000)	(0.001)
Year dummies	Yes	Yes	Yes	Yes	Yes
Constant	3.631***	3.517***	3.845***	4.094***	2.150
	(1.327)	(1.323)	(1.214)	(1.112)	(1.488)
Observations	19652	19652	19652	19652	3413
States	32	32	32	32	31
R-squared	0.92	0.92	0.92	0.92	0.91

Robust standard errors clustered by state, *** p<0.01, ** p<0.05, * p<0.1.
ˆ Dummy included for observations where Originating Lender is not Wells Fargo.
ˆˆ Dummy included for observations where Servicing Lender is not Wells Fargo.

Table 5: Matching Results (Average Treatment Effect on the Treated) (1996-2013)

	Model 1
State law (PL280)	-0.046*
	(0.027)
Observations	19658
Min/max matches	4/8

Robust standard errors, * p<0.1.
Nearest-neighbor matching.
Exact match on *Home on reservation*. 26 states.
See text for full details.

Table 6: State Law and Section 184 Single Home Loan Limit (logged) (2013)

	Model 1
State law (PL280)	0.179*
	(0.100)
Income per capita (logged, in state)	1.160**
	(0.466)
Indian pop. per capita (in state)	0.641
	(0.638)
Constant	0.129
	(4.910)
Observations	1877
States	26
R-squared	0.72

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