Lessons in Fiscal Federalism from American Indian Nations

by
Terry L. Anderson and Dominic P. Parker[+]

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Abstract: Since Native Americans were relegated to reservations in the nineteenth century, their governance structures have been dictated largely from Washington, leaving little room for an optimal mix of tribal, federal, and state control to evolve. This paper explores the optimal mix with respect to law enforcement and natural resource management. The key advantages of decentralized tribal control lie with its conformity to local norms of legitimacy, and with its better incentives for maximizing returns from local resources. The key advantage of the larger nodes of government lies with scale economies in resource management and in the provision of a uniform rule of law. Based on these tradeoffs, we argue that some responsibilities are ill-suited for non-local control (e.g, jurisdiction over reservation crime) whereas others are well-suited (e.g., jurisdiction over commercial contracts involving non-Indians). We explain why local jurisdiction over contracts, and top-down control of natural resources by the federal government, can stunt economic development on reservations. We evaluate these arguments by reviewing empirical studies, and by analyzing a novel reservation-level panel data set spanning 1915-2010. The evidence from both sources suggests the current mix of governance authority – which has largely been imposed on tribes rather than chosen by them - has slowed income growth. We conclude that tribes should be free to choose a different system of federalism and we identify some potential barriers to a freer choice.

Fiscal federalism focuses on the tradeoffs inherent in comparing which governmental functions "are best centralized and which are best placed in the sphere of decentralized levels of government" (Oates 1999, 1120).[1] On the side of decentralization are lower agency costs between citizens (principals) and public officials (agents). It is easier for citizens to monitor what local public officials are doing and to create decentralized institutions that match local customs, culture and norms.[2] On the side of centralization are scale economies in the provision of

"market-supporting public goods" (Besley and Ghatak 2006, 286) and networks of contract enforcement that are uniform across geographic space and socioeconomic groups (Dixit 2003). Theoretically, these two tradeoffs determine the optimal locus or size of government.

The market-supporting public good of interest here is the provision of a law and order system that facilitates market transactions. Scale economies exist in its provision because of the large fixed costs associated with organizing police forces, operating courts, writing legal codes, and compiling legal precedent.

Fiscal federalism provides an excellent lens through which to view the provision of law and order on American Indian reservations, which could be administered by federal, state, or tribal governments. Relative to tribal governments, federal and state legal systems encompass larger regions and populations and thus can exploit scale economies in establishing reputations and building precedent upon which market transactions rely.[3] For this reason, reservation economies may function better under federal or state legal systems, which provide relatively uniform contract enforcement that is built on large precedent and is therefore fairly predictable. On the other hand, decentralized tribal control better enables tribes to rely on rules and laws that match indigenous norms of legitimacy (Cornell and Kalt 2000). For Indian-to-Indian interactions, whether criminal or civil, adherence to such norms can be beneficial, but for Indian-to-non-Indian interactions, adherence to local norms can raise transaction costs and suppress economic exchange.

Fiscal federalism also provides a lens through which to view reservation property rights to land and natural resources. On one hand, individual tribes have time and place specific knowledge of local resource values and an incentive to capture those values. These incentive and information advantages imply that land and resource use will be optimized only if property rights

are held by tribes or their members and defined as tribes choose. Such arrangements might include communal property of the type described by Ostrom (1990).[4] On the other hand, property institutions that comport with surrounding jurisdictions can better facilitate resource management and access to capital markets involving non-tribal members.

Ideally, the tensions between local and central control could be resolved through the endogenous and bottom-up process of letting an efficient division of governmental responsibilities emerge. On Indian reservations, a truly bottom-up process would likely take into account the tradeoffs described above. The process would allow each tribe to freely choose the exact dimensions of law over which to assert local control, and the exact dimensions over which to yield to state or federal governments. For some tribes, the optimal arrangement might be local definition and enforcement of criminal, family, and commercial contracts as well as reservation property rights. For other tribes, the optimal arrangement might include non-local enforcement of commercial contracts, for example.

Unfortunately, the history of legal and property institutions on Indian reservations has been anything but bottom up. Rather, those institutions have been mainly determined by the federal government, driven from top down. For example, tribal jurisdiction over contracts and crimes was stripped from some tribes during the 1950s and 1960s and given to the states surrounding reservations without tribal consent. Federal policy has since then made it difficult for tribes to get their jurisdiction back. There are sometimes also barriers to tribes wanting to waive their local jurisdiction over certain subject matter to larger spheres of government or on a case-by-case basis.[5] Since the reservation era, the federal government has exerted control over property rights to reservation land and natural resources against the wishes of tribes. Again, it has been difficult for tribes to reassert local control. The top down changes in tribal, state, and

federal control on reservations have created experiments from which social scientists can learn about fiscal federalism, but the experiments have often brought detrimental consequences for American Indians.

In what follows, we will argue that the muddy division of federal, state, and tribal control that exists on today's reservations is far from optimal for American Indians and their reservation economies. Single tribal units are typically responsible for their legal infrastructure, and this local jurisdiction over contracts has deterred some economic development. The problem is that tribal legal systems may lack the precedent needed to encourage trade with non-Indians. The mis-match runs in the other direction with respect to federal control over land and natural resources. Here the available evidence implies that non-local control has stunted reservation development. We conclude that tribes should be free to choose a different system of federalism than they are currently under and suggest how barriers to a freer choice might be removed.

Crime and Contracts

The main doctrine governing tribal sovereignty comes from *Cherokee Nation v. Georgia* (30 U.S. 1 [1831]). In that case, the U.S. Supreme Court ruled that a tribe is "a distinct political society separated from others, capable of managing its own affairs and governing itself," but also that reservations are "domestic dependent nations," making the relationship between tribes and the federal government like that of "a ward to his guardian." Under this doctrine, tribal authority to create and enforce laws governing reservations is exclusive unless the federal government exercises its "guardian" power by extending federal or state jurisdiction to reservations.

The Imposition of Federal and State Jurisdiction

Tribal sovereignty over crimes and contracts eroded with the passing of two major acts of the U.S. Congress. The first was the Indian Major Crimes Act of 1885, in response to the trial of a Lakota Indian who killed another Lakota man on a reservation in South Dakota. In that case, the Lakota tribal court, using traditional methods of dispute resolution, required the perpetrator to compensate the family of the victim with goods and property but allowed him to go free. Non-Indian observers, arguing that tribal decisions such as this encouraged lawlessness on reservations, successfully lobbied Congress to pass the Indian Major Crimes Act. The act gave the federal government jurisdiction to prosecute serious criminal offenses (e.g., murder and rape) committed on reservations regardless of the race of the perpetrator or victim (Harring 1994).

The other major act was P.L. 280, passed in 1953 during the termination era. Between 1945 and 1961 the federal government's explicit goal was to place reservation Indians under the same laws as other U.S. citizens as rapidly as possible (Getches et. al. 1998). P.L. 280 can be viewed as a first step towards achieving this goal.

It required that jurisdiction over all criminal offenses (major and minor) and over civil disputes on some reservations be turned over to the state surrounding those reservations. P.L. 280 initially mandated that the transfer apply to most reservations located in Alaska, California, Minnesota, Nebraska, Oregon, and Wisconsin.[6] These states are known as the "mandatory" P.L. 280 states because Congress, not the state legislatures, initiated and required the jurisdictional shift. All states were eventually given the option to assume P.L. 280 jurisdiction through legislative action, and some exercised the option.

Table 1 lists the states that ultimately assumed jurisdiction. Today, more than half of the 327 federally recognized reservations are in states that assumed most or all of the jurisdiction

available under P.L. 280. P.L. 280 added a layer of complexity to reservation jurisdictional authority which is summarized in Table 2.[7] It summarizes the main differences in criminal and civil jurisdiction between P.L. 280 and non-P.L. 280 reservations.

Congressional records indicate that P.L. 280 was advanced as an opportunity to improve criminal law enforcement on reservations. The 1953 Senate report on the law stated:

> As a practical matter, the enforcement of law and order among the Indians in Indian Country has been left largely to the Indian groups themselves. In many States, tribes are not adequately organized to perform that function; consequently, there has been created a hiatus in law enforcement authority that could best be remedied by conferring criminal jurisdiction on the States indicating a willingness to accept such responsibility. (U.S. Senate 1953, 5)

Table 1
States with Public Law 280 and Related Jurisdiction

State	Mandatory P.L. 280	Optional P.L. 280		Notes
		Criminal	Civil	
Alaska	Yes	No	No	Tribal jurisdiction over some criminal offenses committed on the Annette Island Reservation was retained by the Metlakatla Indian Community.
Arizona	No	No	Partial: the state assumed jurisdiction over water & air pollution (1967)	
California	Yes	No	No	
Florida	No	Full (1961)	Full (1961)	
Idaho	No	Partial: the state assumed jurisdiction over seven subject areas and full jurisdiction with tribal consent (1963).		The seven subject areas are: school attendance; juvenile delinquency; abused children; mental illness; public assistance; domestic relations; and operation of vehicles on state and county roads. The Nez Perce is the only tribe to consent, allowing state jurisdiction over additional criminal offenses.
Iowa	No	No	Full: over the Sac & Fox Reservation (1967)	A federal statute passed in 1948 conferred criminal jurisdiction to the state over the Sac & Fox Reservation.
Kansas	No	No	No	A federal statute passed in 1940 conferred criminal jurisdiction to the state over all reservations within the state.
Minnesota	Yes	No	No	Red Lake Reservation was exempted. P.L. 280 jurisdiction over Bois Forte Reservation (formerly Nett Lake) was retroceded in 1972.
Montana	No	Full: over Flathead Reservation	Full: with tribal and county consent, but no tribe has consented (1963).	Most of the criminal jurisdiction assumed by the state over Flathead Reservation was retroceded in 1993.
Nebraska	Yes	No	No	The state retroceded criminal jurisdiction over Omaha Reservation in 1970, and over the Winnebago Reservation in 1986.
Nevada	No	Full: with tribal consent	Full: with tribal consent (1955)	P.L. 280 jurisdiction was conferred over a number of small reservations. Retrocession has now occurred over most reservations in this group.

Table 1
States with Public Law 280 and Related Jurisdiction - Continued

State	Mandatory P.L. 280	Optional P.L. 280		Notes
		Criminal	Civil	
New York	No	No	No	Federal statutes passed in 1948 and 1950 conferred criminal and civil jurisdiction to the state over all reservations.
North Dakota	No	No	Full: with individual or tribal consent, but no tribe has consented (1963).	A federal statute passed in 1948 conferred criminal jurisdiction to the state over Devil's Lake Reservation. Individual acceptance has been held invalid under the Supremacy Clause of the U.S. Constitution.
Oregon	Yes	No	No	Warm Springs Reservation was exempted from the list of mandatory reservations. The state retroceded criminal jurisdiction over the Umatilla Reservation in the 1980s.
South Dakota	No	The state attempted to assume jurisdiction over criminal offenses and civil causes of action arising on highways, subject to federal government reimbursement of enforcement costs (1961).		The state supreme court held this assumption to be invalid.
Utah	No	Subject to tribal consent (1971).		No tribe has consented
Washington	No	In 1957, the state assumed full P.L. 280 jurisdiction over nine reservations that had consented. In 1963, the state assumed jurisdiction without tribal consent over non-Indians and limited jurisdiction over Indians on the remaining reservations.		Criminal jurisdiction over Quinalt and Port Madison Reservations assumed through the 1957 legislation was retroceded in 1969 and 1972 respectively. The jurisdiction assumed over these reservations through the 1963 legislation remained intact. In 1986 the state retroceded jurisdiction over Indians for crimes committed on the Colville Reservations.
Wisconsin	Yes	No	No	The Menominee Reservation was exempted from the list of mandatory reservations and the reservation was terminated by federal statute in 1961. The Menominee Reservation was reinstated in 1973, and retrocession of P.L. 280 jurisdiction was granted shortly thereafter.

Source: Anderson and Parker (2008).

The Senate report gives only a terse reference to civil jurisdiction, which was also extended to the mandatory states through P.L. 280. Goldberg-Ambrose (1997, 50) argues that the extension of civil jurisdiction was "an afterthought in a measure aimed primarily at bringing law and order to reservations, added because it comported with the pro-assimilationist drift of federal policy and because it was convenient and cheap." More generally, Goldberg-Ambrose (1997) argues that the main legislative purposes of P.L. 280 were to bring law and order to reservations and to save the federal government money (by unloading the jurisdictional obligations of major crimes onto states). Based on these factors and the pro-assimilation drift of federal policy during the 1950s, why weren't more reservations placed under P.L. 280?

Table 2
Judicial Jurisdiction on American Indian Reservations

	Criminal Jurisdiction	
	non-P.L. 280 Jurisdiction	P.L. 280 Jurisdiction
Tribal	Over American Indians; subject to a few limitations	Over American Indians; subject to a few limitations
Federal	Over major crimes committed by Indians; over interracial crimes	Same as off reservation
State	Only over crimes committed by non-Indians against other non-Indians	Over Indians and non-Indians; subject to a few limitations
	Civil Jurisdiction	
Tribal	Over American Indians and non-Indians	Over American Indians
Federal	Same as Off-Reservation	Same as Off-Reservation
State	None, except some suits between non-Indians on fee-simple lands	Over suits involving non-Indians generally; subject to a few limitations

Source: Melton and Gardner (2000).

One reason more reservations were not placed under P.L. 280 is that they were in states with constitutions that had disclaimers of jurisdiction over Indian Country. These states were Arizona, Idaho, Montana, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Utah, Washington, and Wyoming.[8] Given the option of assuming P.L. 280 jurisdiction, many states declined, apparently because it would have been costly to amend their constitutions. As shown in table 1, the only disclaimer state that acquired major P.L. 280 jurisdiction was Washington. It did so without amending its constitution making the legal validity of its assumption uncertain.

For the purposes of this paper, we view P.L. 280 as an experiment in centralized versus local control over criminal cases and contract enforcement. It is not a pure natural experiment because Congress did not roll dice to determine P.L. 280 status. This is evident because the assignment of mandatory P.L. 280 was based on history, geography, and claims of criminal activity rather than random draws. Importantly, however, we later show that the selection process ultimately did not target a biased sample of tribes as measured by average economic conditions reservations prior to 1953. We return to our assessment of the economic effects of state versus tribal jurisdiction after first discussing the impact of P.L. 280 on tribal satisfaction with criminal law enforcement.

The Costs of State Jurisdiction

The passage of P.L. 280 was controversial, and much of the legal and sociology literature argues that the loss of sovereignty disadvantaged tribes. Goldberg-Ambrose (1997, ix-x), for example, refers to the federal legislation as a "calamitous event" and argues that tribes put under state jurisdiction had to "struggle even harder to sustain their governing structures, economies, and cultures." One of the major objections was that P.L. 280 was imposed upon Indian tribes

without their consent in direct violation of the doctrine of tribal sovereignty. The other criticism of the law is that states are not well suited to handle criminal incidents involving Indians given that tribal norms differ significantly as to what constitutes a crime.[9]

Although state jurisdiction binds tribes to a larger and more extensive system of law and order, it does so at the cost of assigning rules and compliance procedures that are unlikely to match tribal cultures. According to Goldberg-Ambrose (1997), Indian elders, in particular, have expressed concerns of not being able to cope with the different language and culture of state courts. Indians have also expressed concerns about facing racial discrimination in state criminal courts and being subject to culturally insensitive law enforcement systems.

Goldberg and Singleton (2008) interviewed approximately 350 reservation residents, law enforcement officials, and criminal justice personnel from a non-random sample of seventeen "confidential reservation sites – 12 subject to state/county jurisdiction under P.L. 280, four operating under the more typical federal/tribal criminal jurisdiction regime, and one, a 'straddler' with some territory in a state covered by P.L.280 and the remainder in a different state" (vi). They concluded that "reservation residents in P.L. 280 jurisdictions typically rate the availability and quality of law enforcement and criminal justice lower than reservation residents in non-P.L. 280 jurisdictions" (vi). In addition, some tribal members reported a reluctance to report crimes to non-tribal police because of fear, distrust, and disagreement with rules and values of non-reservation police and courts.

Their conclusion emphasizes the importance of local control with respect to policing and criminal law enforcement. Benefits arise because indigenous norms and preferences differ substantially from those of non-Indian criminal law methods, which is one of the key arguments for local control in a federalist system.

The Benefits of State Jurisdiction

The benefits from state jurisdiction emanate from having a legal system that binds tribes with a larger and more extensive system of contract enforcement, described by Besley and Ghatak (2006) as a key market-supporting public good. They argue that a well-functioning legal system makes it feasible for the poor to participate in markets and hence benefit from gains from trade. This reasoning is analogous to Dixit (2003), who argues that large and uniform systems of contract enforcement encourage trading across disparate parties and enables gains from trade to be captured. External jurisdiction also provides a credible commitment to a stable rule of law and there is evidence that this credible commitment encourages economic activity in various settings. In the case of former British colonies, for example, there is evidence that the former colonies still bound to British Privy Council appellate courts have achieved higher levels of investment and faster economic growth when compared to former British colonies that have established purely independent local court systems (Voight et al. 2007).

External, non-local jurisdiction is also plausibly beneficial on Indian reservations where the average tribal legal system is considered to be much less complete, more difficult to access, and less constrained by judicial precedent (Cooter and Fikentscher 2008, Haddock and Miller 2006).[10] These conditions, real or perceived, create an uncertain contracting environment, particularly for non-Indians contemplating doing business on reservations.

Using cross-sectional growth regressions, our earlier research (2008) provides a measure of the benefits of state rather than tribal jurisdiction over contracts by comparing per capita income growth from 1969 to 1999 for Native Americans on reservations under state versus civil tribal jurisdiction. Our analysis focused on the 71 reservations for which American Indian

populations exceeded 1,000 in 1999, and we include an indicator variable for those reservations for which contracts were under the jurisdiction of state courts.[11]

Using a simple regression model that only includes 1969 per capita income as a control variable, we showed that growth was 35 percentage points higher on the 22 reservations under state jurisdiction. Controlling for land tenure, resource endowments, human capital, and economic conditions in surrounding counties, growth was still 31 percentage points higher under state jurisdiction. The relationship between P.L. 280 and growth was strongest between 1969 and 1979, and slightly less so between 1989 and 1999. We also found higher rates of income growth on reservations under state jurisdiction that were not explained by differences in the amount of casino gaming and in measures of acculturation.[12]

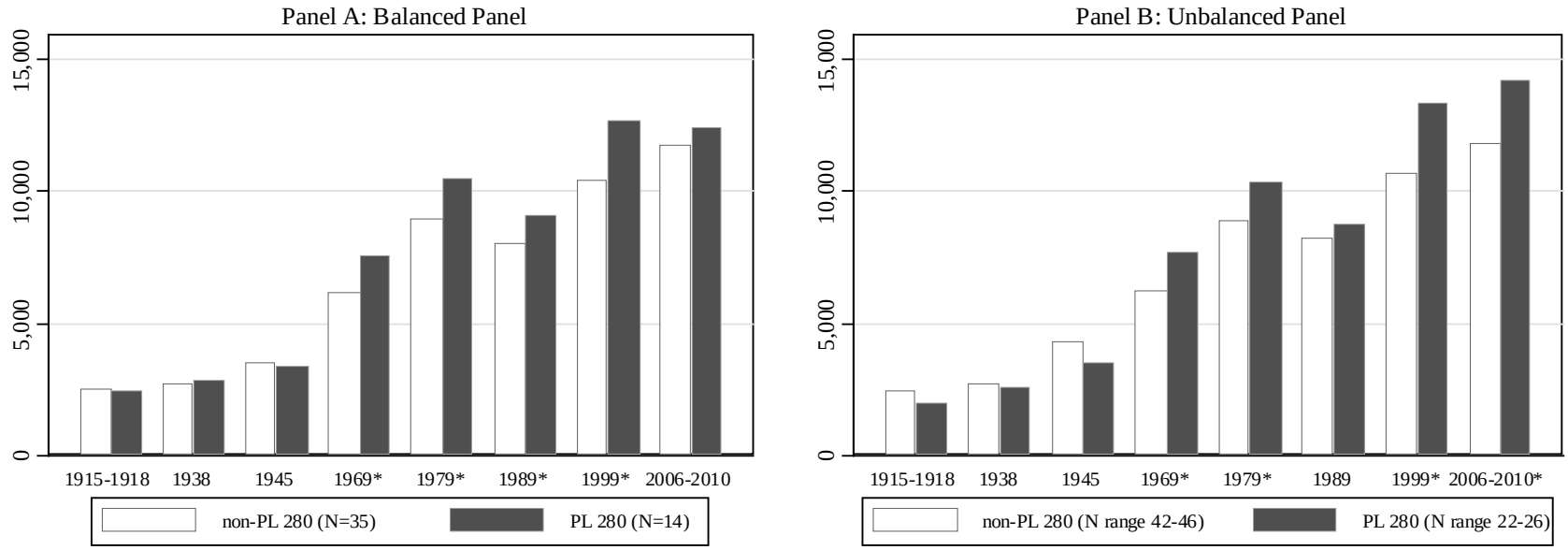
Lacking income data prior to the passage of P.L. 280, Anderson and Parker (2008) could not rigorously demonstrate a causal effect of state jurisdiction on growth, primarily because we could not rule out pre-existing differences in incomes and growth before the passage of P.L. 280. We could only argue that there was no evidence to suggest that the selection of P.L. 280 tribes was biased towards a subset of reservations that would have experienced faster growth in the absence of P.L. 280. Moveover, because census data on reservation income were only available starting in 1969, Dimitrova-Grajzl et al. (2014a, 130) criticized our study, noting that it focused "solely on the time period beginning two decades after P.L. 280's enactment." Dimitrova-Grajzl et al. also echoed a criticism of Goldberg (2010) who revisited the history of P.L. 280 in order to critique our empirical analysis. Goldberg (2010, 1048) suggests that Congress may have targeted tribes based on their "…inclination to participate in the market economy and strive for economic success as measured by per capita income."[13] Therefore, the "…possibility of this kind of

selection bias makes it extremely difficult to attribute any causal force to state, as opposed to tribal, civil jurisdiction" (Goldberg 2010, 1050).

To address these and related concerns, we have assembled a longer panel data set of reservation per capita incomes spanning certain years from 1917 to 2010.[14] The 1917 data actually report the average per capita incomes of Indians on reservations during 1915-1918. The 1917, 1938, and 1945 data come from reports of the Bureau of Indian Affairs. The 1938 and 1945 data are from the U.S. National Archives and the 1917 data are available online. The year 1945 is the closest year prior to 1953 for which we were able to find comprehensive income data.[15] The 1969, 1979, 1989, 1999 data come from decadal U.S. Census reports, which were used in our earlier study. To this we add 2010 data from American Community Surveys.[16] The 1917-2010 per capita income panel, the longest studied in the Native American development literature, spans a longer time period than most cross-country studies of institutions and growth.

Figure 1 compares the mean per capita incomes (in 2010 dollars) for reservations put under state jurisdiction (with respect to contracts) for the years with available data. Panel A makes the comparisons for the 49 reservations for which data are available for each of the eight time periods. Panel B makes the comparisons for the larger set of reservations for which data are available for at least seven of the eight time periods. For both samples, there was no statistical difference in the mean incomes prior to P.L. 280. These results indicate that, unless there was systematic change during 1946-1952, the average tribe put under P.L. 280 was not economically advantaged in terms of per capita income prior to the law. Moreover, if P.L. 280 targeted acculturated tribes, the comparison of means suggests that acculturation was not an obvious economic advantage between 1915 and 1945.

Figure 1
Mean Per Capita Incomes for American Indians on Reservations
(in 2010 $s)



Notes: For 1915-1918, we are reporting the mean incomes over 1915, 1916, 1917 and 1918 based on income data from Bureau of Indian Affairs reports available online at http://digicoll.library.wisc.edu/cgi-bin/History/History-idx?type=header&id=History.AnnRep90&isize=M. The 1938 and 1945 means are calculated from data contained in Bureau of Indian Affairs reports located at the U.S. National Archives in Washington D.C. Because the 1945 reservation income estimates do not report reservation populations, we calculate per capita income by dividing 1945 aggregate income by the populations on reservation in 1943, which is the closest year to 1945 for which we have comprehensive Indian population data. The 1969, 1979, 1989, and 1999 means are based on data from decadal U.S. census reports. The 2006-2010 means are based on data from the U.S. Census Bureau, American Community Surveys conducted during the 2006-2010 period. * denotes rejection of the null hypothesis of no difference in means at $p < 0.10$ whether assuming equal or unequal variance. The "balanced" panel consists of reservations for which income data are available for each of the eight time periods. The "unbalanced" panel consists of reservations for which income data are available for seven of eight time periods. The definitions of P.L. 280 and non-P.L. 280 tribes come from Anderson and Parker (2008).

By 1969, after P.L. 280 had been implemented, there were large, statistically significant differences in mean incomes that remained for nearly every decade thereafter. Something happened between 1945 and 1969 that improved relative incomes on P.L. 280 reservations, and the obvious candidate is a change in the administration of law and order brought about by P.L. 280.

To assess differences in per-capita income trends before and after P.L. 280, we first estimate the following regression model.

(1) $$y_{it} = \alpha + \beta_1 t_{prePL280} + \beta_2 stjur \cdot t_{prePL280} + \beta_3 t_{postPL280} + \beta_4 stjur \cdot t_{postPL280} + \varepsilon_{it}$$

where y_{it} is the inflation-adjusted income per capita of American Indians on reservation *i* in time *t*. The parameter, β_1, is the linear time trend in income for all reservations prior to P.L. 280 (i.e., 1917-1945) and β_2 is the difference in the 1917-1945 time trend for reservations that were later put under state jurisdiction as a result of P.L. 280. Similarly, β_3 is the linear 1969-2010 trend for all reservations, and β_4 is the difference for reservations put under P.L. 280.

Table 3 shows regression results of (1) and figure 2 displays the estimated linear trends. There is no statistically significant difference in income trends from 1917 through 1945. After P.L. 280, however, income growth diverges across the two sets of reservations as demonstrated by the positive sign and statistical significance of the coefficients on the interaction between state jurisdiction and the 1969-2010 trend. Visually, figure 2 shows that the divergence in income trajectories begins after 1945, but not before.

Table 3
Regression Estimates of Linear Time Trends

	BALANCED PANEL	*UNBALANCED PANEL*
1917- 1945 Time trend	476.67***	924.28***
	(0.000)	(0.000)
1917-1945 Time trend *x* state jurisdiction	-21.058	-213.36
	(0.855)	(0.250)
1969-2010 Time trend	1186.42***	1309.74***
	(0.000)	(0.000)
1969-2010 Time trend *x* state jurisdiction	212.49**	286.79***
	(0.025)	(0.001)
Constant (1917 intercept)	1971.02***	1301.13***
	(0.000)	(0.000)
Observations	392	553
Adjusted R^2	0.741	0.650

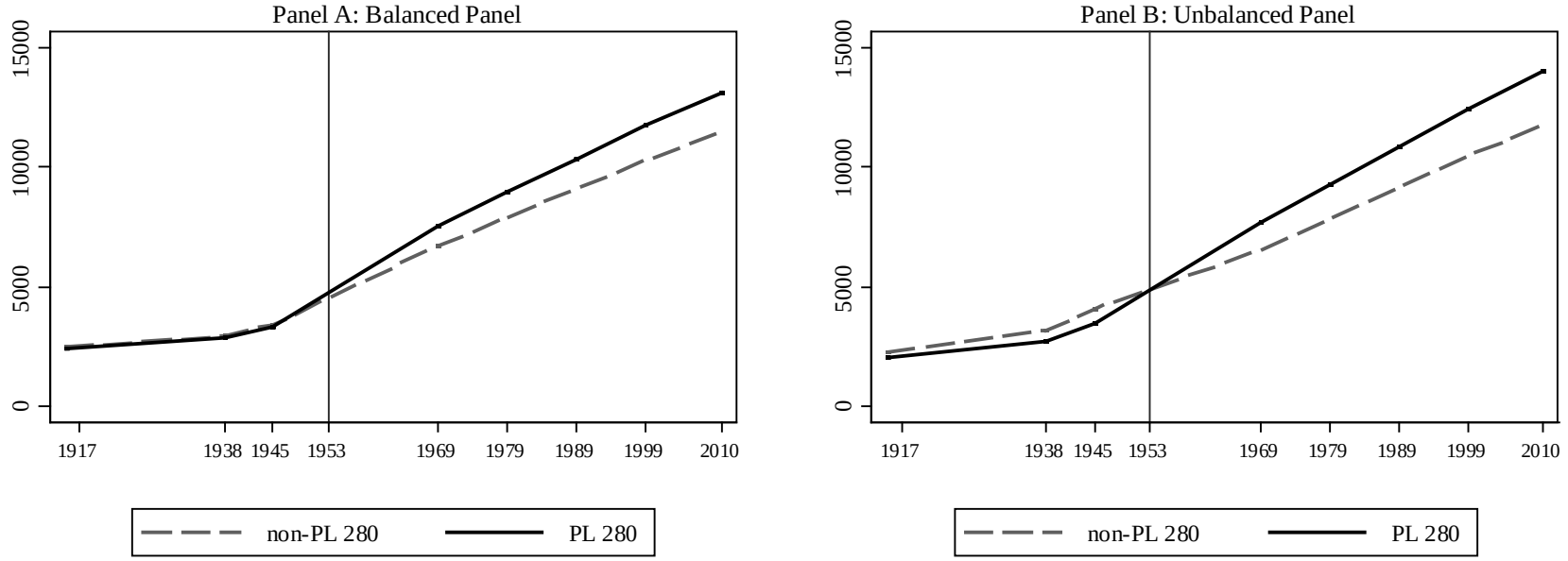
Notes: * p < 0.10, ** p < 0.05, and *** p < 0.01. P-values are reported in parentheses and are based on standard errors that are clustered at the reservation level. The "balanced" panel consists of reservations for which income data are available for each of the eight time periods. The "unbalanced" panel consists of reservations for which income data are available for seven of eight time periods. The definitions of P.L. 280 and non-P.L. 280 tribes come from Anderson and Parker (2008).

The following panel regression model allows for more flexible time trends and controls for time-varying covariates:

(2) $$y_{it} = \alpha_i + \theta_t + \beta st.jur_{it} + \delta state.pci_{st} + \eta oilwells.percap_{it} + \lambda slots.percap_{it} + \varepsilon_{it}.$$

Here y = per capita income, i=reservation, s=state, and t=time period. Each model controls for time shocks affecting all reservations (θ_t), and allows each reservation to have its own income intercept (α_i). The use of reservation-specific fixed effects controls for time-invariant differences across reservations (e.g., geographic location, reservation size, and land quality) that may cause persistent cross-sectional differences in income. In addition, we introduce time varying covariates to control for economic shocks that might affect income growth. The first covariate we include is the per capita income of the state surrounding the reservation.[17] The

Figure 2
Per Capita Incomes based on Estimated Linear Time Trends
(in 2010 $s)



Notes: The results plotted here come from the regression results reported in table 3. The vertical bar in 1953 represents the passage of P.L. 280. The "balanced" panel consists of reservations for which income data are available for each of the eight time periods. The "unbalanced" panel consists of reservations for which income data are available for seven of eight time periods. The definitions of P.L. 280 and non-P.L. 280 tribes come from Anderson and Parker (2008).

second covariate is the number of oil and gas wells drilled on reservations divided by the reservation's Native American population in each of the relevant years.[18] The third covariate measures casino gaming activity on reservations with the number of slot machines per American Indian in 1999, and 2010. The casino variable is zero prior to 1999 because reservations in these samples did not have casinos prior to 1999.[19]

Table 4 presents the panel regression results. Column 1, which employs the balanced panel of 392 reservations (i = 49, t = 8), shows that state jurisdiction is associated with a $1,243 increase in per capita income over the full time period. Adding the covariates in column 2, which forces us to drop 1917 data because of missing state-level per capita income data for that time period, does not affect the state jurisdiction coefficient, but, as expected, state per capita income, oil wells per capita, and slot machines per capita are all positively associated with reservation per capita income. [20] Columns 3 and 4 introduce reservation-specific linear time trends to control for income growth trends prior to P.L. 280, which increases the size and statistical significance of the state jurisdiction coefficients. Columns 5-8 show the estimated coefficients for equivalent specifications using the unbalanced panel, which enables a larger number of observations. The results in columns 5-8 are qualitatively similar to those in columns 1-4. In both samples, the coefficients on state jurisdiction are positive, economically large, and precisely estimated with the exception of column 7. To appreciate the magnitude of the coefficients, we note that mean growth from 1946-2010 across reservations was $8,393 in the balanced panel and $8,657 in the unbalanced panel, in 2010 inflation adjusted dollars.[21]

Table 4
Panel Regressions of Per Capita Income on American Indian Reservations

	BALANCED PANEL				UNBALANCED PANEL			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
P.L. 280 Reservation (=1 if yes, otherwise =0)	1243.3** (0.020)	1234.4*** (0.007)	1867.9** (0.022)	2771.0*** (0.001)	2065.9*** (0.000)	1302.7*** (0.001)	1232.5 (0.177)	2007.1** (0.015)
State per capita income		0.273*** (0.000)		0.348*** (0.000)		0.280*** (0.000)		0.355*** (0.000)
Oil wells drilled per capita		4248.7*** (0.011)		2696.9*** (0.003)		4104.9*** (0.001)		2670.5*** (0.004)
Slot machines per capita		1662.6** (0.017)		1701.5** (0.022)		1642.5*** (0.000)		1360.1 (0.113)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reservation fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reservation time trends	No	No	Yes	Yes	No	No	Yes	Yes
Observations	392	343	392	343	553	487	553	487
Adjusted (within) R^2	0.85	0.82	0.91	0.89	0.73	0.78	0.81	0.84

Notes: * p < 0.10, ** p < 0.05, and *** p < 0.01. P-values are reported in parentheses and are based on standard errors that are clustered at the reservation level. The number of observations is lower in the specifications that control for state-level per capita income because we lack 1917 data on state per capita incomes. The state-level per capita income data come from the U.S. Bureau of Economic Analysis. The slot machines variable takes on a value of zero for all reservations prior to the 1989 Census. The data on slot machines for 1989 and 1999 were compiled by Anderson and Parker (2008) and also used in Cookson (2010). The data on slot machines in 2010 were compiled by the authors from www.500nations.com/Indian_Casinos.asp. This site provides the number of slots/gaming machines for all American Indian casinos in the U.S. Each casino can be tied to a reservation by looking at which tribe owns the casino and where the casino is located. We downloaded gaming machine data from the site in 2013, so our measure may include casinos built after 2010. The data on the number of oil and gas wells drilled come from our merge of ArcGis Shapfiles of U.S. Indian reservations boundaries with iHS data on the longitude and latitude of oils and gas wells drilled in the Western Region of the U.S. For this variable, we aggregate the number of oil and gas wells drilled over the four year period prior to the year in which income data are reported. For example, our 1999 measure aggregates the number of wells drilled over 1995-1999 and divides this number by the 1999 American Indian population of the reservation.

To address the possibility that the acculturation of tribes, rather than P.L. 280 itself, caused the difference in income growth over 1946-2010, we have collected data on blood quantum ratios that existed across reservations prior to the passage of P.L. 280. Table 5 compares the mean percent of "full-blooded" American Indians in 1938, which is the closest pre-PL 280 year for which we have data. Panel A shows that a smaller percentage of Native Americans on reservations that were later put under P.L. 280 were full blooded.

Although having a greater percentage of American Indian residents with white blood would not necessarily advantage reservation income growth after 1946, it is possible that the relationships between P.L. 280 and income growth in Table 4 are confounded by this systematic difference in blood quantum.[22] To address this possibility, we create trimmed subsamples of reservations for which there is no mean difference in blood quantum across P.L. 280 and non-P.L. 280 reservations (see Panel B of Table 5). The samples were balanced by first ranking the non-P.L. 280 reservations in descending order based on percent full blood, and second sequentially dropping the highest ranked non-P.L. 280 reservations until the difference in means across P.L. 280 and non-P.L. 280 reservations was minimized for both the balanced and unbalanced trimmed samples. This process led to the dropping of 18 and 20 of the least acculturated reservations for the balanced and unbalanced samples, respectively.[23]

Table 5
Mean Blood Quantum on Reservations Prior to P.L. 280

	P.L. 280 Reservations (N)	Non-P.L. 280 Reservations (N)	t-stat for difference
Percent of "full blooded" American Indians			
Panel A			
Balanced Panel	38.98 (14)	62.97 (35)	2.71
Unbalanced Panel	41.29 (25)	62.58 (45)	3.05
Panel B			
Trimmed Balanced Panel	38.98 (14)	39.22 (17)	0.03
Trimmed Unbalanced Panel	41.29 (25)	41.47 (25)	0.03

Notes: The data on blood quantum are for 1938, the closest year prior to P.L. 280 for which we have comprehensive reservation-level data. The variable measures the percentage of the American Indian population on a reservation with 100% American Indian blood. The blood quantum data come from Bureau of Indian Affairs reports that are housed at the U.S. National Archives in Washington D.C. The t-statistics above assume equal variance. Allowing for unequal variance, the t-statistics are 2.68 and 3.04 respectively for the Balanced and Unbalanced samples and 0.03 and for both of the trimmed samples.

Table 6 presents the results of the regression estimates that employ the trimmed samples. The eight columns of regression specifications are identical to those shown in Table 4. The relationship between P.L. 280 and per capita income remains positive, economically large, and statistically precise (again with the exception in column 7). Moreover, comparing the point estimates on the P.L. 280 coefficients across table 4 and table 6 shows they are effectively indistinguishable. This implies that the P.L. 280 coefficients in table 4 are unlikely attributable to differences in acculturation as measured by blood quantum.

Table 6
Panel Regressions of Per Capita Income using Subsamples Trimmed by Blood Quantum

	TRIMMED BALANCED PANEL				TRIMMED UNBALANCED PANEL			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
P.L. 280 Reservation (=1 if yes, otherwise =0)	1374.4** (0.025)	1648.4*** (0.002)	1730.7** (0.040)	2694.1*** (0.002)	2397.9*** (0.000)	1679.8*** (0.000)	1102.1 (0.290)	1733.6** (0.047)
State per capita income		0.251*** (0.000)		0.356*** (0.000)		0.263*** (0.000)		0.410*** (0.000)
Oil wells drilled per Am. Indian		-1.3e+04 (0.639)		-2.0e+04 (0.328)		-1.0e+04 (0.680)		-2.5e+04 (0.175)
Slot machines per Am. Indian		1825.6** (0.014)		1564.1** (0.046)		1610.3*** (0.000)		1255.1 (0.158)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reservation fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reservation time trends	No	No	Yes	Yes	No	No	Yes	Yes
Observations	248	217	248	217	390	342	390	342
Adjusted (within) R^2	0.85	0.82	0.90	0.88	0.71	0.77	0.78	0.83

Notes: * p < 0.10, ** p < 0.05, and *** p < 0.01. P-values are reported in parentheses and are based on standard errors that are clustered at the reservation level. Each sample is trimmed in order to equalize the mean percentage of full blooded American Indians on PL 280 and non-PL 280 reservations prior to the law (see Table 5). The specifications here match those shown in Table 4.

Overall we conclude from the table 3, table 4, and table 6 regressions that:

1. state jurisdiction is positively related to income growth on reservations from 1946 to 2010, and

2. the relationship between jurisdiction and growth is not merely driven by differential state income growth, oil and gas development, tribal gaming, or pre-P.L. 280 trends in reservation income growth, and

3. the relationship is robust to using subsamples of P.L. 280 and non-P.L. 280 reservations with statistically indistinguishable mean levels of acculturation as measured by blood quantum prior to P.L. 280.

To summarize, the evidence suggests that either P.L. 280 increased per capita incomes on reservations, or some other set of events or policies that are correlated with P.L. 280 did so. Of course, even if one accepts that P.L. 280 caused the increased incomes, this does not mean the benefits exceeded the costs described above.[24] But our findings do suggest that tribes can further promote economic activity by attaching to a larger system of contract enforcement as fiscal federalism principles suggest.[25]

The Choice of Jurisdictional Scale

The way in which P.L. 280 was implemented and has operated has impaired evolution toward a more optimal legal system for Indian reservations. P.L. 280 could have given tribes a way to accrue the benefits of state jurisdiction without incurring the costs had it allowed tribes to choose state jurisdiction over civil disputes, such as enforcement over debt contracts with non-Indians. But, as noted above, tribes in the mandatory P.L. 280 states were subjected to blanket state jurisdiction over crimes and civil disputes without their consent. Some optional P.L. 280 states did assume partial jurisdiction over certain subject matter but until the 1968 amendments to P.L. 280, these assumptions of jurisdiction did not require tribal consent.

The 1968 amendments of P.L. 280 gave tribes more choices, but fell short of giving tribes the authority to pick and choose the types of disputes over which states would have jurisdiction. The amendments required any state that had not yet assumed jurisdiction to first acquire tribal consent, which seems a marked improvement for tribes. In practice, some states did not want to assume jurisdiction over reservations or only offered to do so if tribes accepted blanket state jurisdiction over crimes and civil offenses. Since 1968 no tribe has consented to P.L. 280 jurisdiction.

The 1968 amendments also set up a process whereby a state (but not a tribe), could initiate the return or retrocession of state jurisdiction that was assumed prior to 1968. Had the tribes been given authority to initiate full or partial retrocession, their decisions to keep or dispose of state jurisdiction would provide valuable information about the relative costs and benefits of tribal control on different reservations. As it stands, we can only observe that a small number of tribes have undergone the process of retrocession, primarily over criminal jurisdiction.[26] According to five case studies of retrocession provided by Goldberg and Singleton (2008), the retrocessions seem to have been motivated by one of two factors; tribal dissatisfaction with state and county law enforcement, or tribal desire to make criminal justice more consistent with overall assertions of sovereignty.

We can only speculate about the reasons for the lack of retrocession on the more than 150 other reservations still under P.L. 280 jurisdiction. It may mean that the majority of tribes believe that state jurisdiction provides net benefits, or it could be that states may be unwilling to withdraw their jurisdiction over these reservations.

There are also contracting challenges that P.L. 280 does not address. When a tribe is a party to a contract, rather than an individual tribal member, it faces difficulties in credibly

agreeing to allow disputes to be adjudicated by an outside court regardless of P.L. 280 status. First, waivers of sovereignty must be explicit, as courts have held that commercial activities of tribes do not in themselves constitute implied waivers (McLish 1988). Second, as McLish (1988, 179) notes, there is "debate as to whether tribes can expressly waive their own immunity without congressional authorization." This means that federal courts might rule that a tribe had no authority to waive its immunity in a contract and thus disallow suits against the tribe for breach of contract in an outside court. More generally, federal courts have a record of ruling that tribal immunity from suit is always retained except when the tribe's ability to waive immunity is patently apparent (see Haddock and Miller 2006). According to both McLish (1988) and Haddock and Miller (2006), less stringent waiver requirements would help tribal businesses compete more effectively in the non-Indian business world.

To summarize, a better federalist arrangement would allow tribes to choose when to yield their jurisdiction and when to retain it. Without the freedom to choose many tribes are stuck with one of two second-best institutional arrangements. Either they establish a strong tribal law enforcement and court system that matches tribal norms and culture, but raises the cost of doing business with non-Indians or they accept state jurisdiction which facilitates contracting with non-Indians, but does not match tribal customs and norms, particularly with respect to criminal law enforcement.

Land and Natural Resources

As noted in the introduction, land tenure on Indian reservations is another example of how fiscal federalism could work, but has not worked, on Indian reservations. The transfer of land out of Indian control—tribal and individual—is well documented (see Carlson 1981), but it

has not been linked to fiscal federalism. To understand the link, it is useful to consider Chief Justice Marshall's opinion in *Cherokee Nation v. Georgia* (30 U.S. 1, 1831), wherein he described the relationship between tribes and the United States as "that of a ward to his guardian." Under this interpretation, the federal government monopolized treaty negotiations with tribes in order to reduce conflicts over land and forced tribes into a subservient position by declaring them wards. It is through this guardian role that the federal government has asserted trusteeship over reservation land and resources and limited each tribe's ability to evolve its own system of land tenure.

Federal Trusteeship

With the passage of the Allotment Act of 1887, the U.S. federal government made its first major attempt at bureaucratic control over how reservation land would be allocated. Prior to the act, informal property rights to reservation land varied significantly across reservations, and Carlson (1992, 73) provides evidence that locally evolved tenure systems were working well for some tribes.

> Once a tribe was confined to a reservation, it needed to find a land tenure system suitable to the new environment. On the closed reservations, the system that evolved was one of use rights. Typically, the [U.S. Bureau of Indian Affairs] agent and members of a tribe recognized an individual's title to animals and, where farming was practiced, a family's claim to the land it worked. . . . What is remarkable is how similar this system of land tenure was to that which existed among agricultural tribes before being confined to reservations.

Under the Allotment Act, however, congress intervened and began to shape property rights. The Allotment Act authorized the president to allot reservation land to individual Indians with the potential for them to obtain private ownership, including the right to alienate, after 25 years or if the allottee was declared "competent" (the word in the act) by the secretary of the interior. For arable agricultural land the Indian head of a household would be allotted 160 acres and for grazing land 320 acres. Indians would become U.S. citizens upon receiving their allotments. On reservations for which total acreage exceeded that necessary to make the allotments, surplus land could be ceded to the federal government for sale with the proceeds deposited in a trust fund managed by the Department of Interior through the Bureau of Indian affairs.[27] A 1903 U.S. Supreme Court ruling, however, allowed surplus land to be opened to non-Indian settlement without tribal consent.

Through a combination of land sales once allotments owners were declared competent and title was alienable and sale or homesteading of surplus land, millions of reservation acres were transferred from reservation jurisdiction to state jurisdiction.[28] The Indian Reorganization Act (IRA) of 1934 halted such transfers, declaring those acres not already alienated to be held in trust by the BIA, either as individual trust land or as tribal lands. Table 7 reports that the number of reservation acres was cut from 136,394,895 in 1887 to 69,588,411 in 1934. This implies that 66,806,454 acres of surplus lands were ceded from Indian Country and sold to or homesteaded by white settlers or retained by the federal government. Of the land that was retained within Indian reservation boundaries, another 22,277,342 acres was out of trust status, and most of these non-trust acres were owned by non-Indians in 1934.

Table 7
Reservation Acres in 1887 and 1933

	Acres
1. Reservation Land, 1887	136,394,895
2. Reservation Land, 1933	69,588,411
a. Tribal trust , 1933	29,481,685
b. Individual trust, 1933	17,829,414
c. Allotments no longer in trust	22,277,342
3. Surplus land surrendered, 1933	66,806,454

Source: Flanagan et al. (2010).

Under IRA, lands not already privately owned were locked into trust status, some for individual Indians who received allotments that were never released from trust—individual trust—and for tribes—tribal trust. Trust status means that the legal title to the land is held by the United States government, but the beneficial title—the right to use or benefit from the land—is held by either individuals or tribes. Trusteeship does keep land in Indian ownership, but the extra layer of bureaucracy that comes with it reduces productivity. As Carlson (1981, 174) concludes, "no student of property-rights literature or, indeed, economic theory will be surprised that the complicated and heavily supervised property rights that emerged from allotment led to inefficiencies, corruption, and losses for both Indians and society."

The combination of the Allotment Act, the IRA, and related land policies created a mosaic of land tenure—fee simple, individual trust, and tribal trust—on most western reservations. Fee-simple lands can be alienated and sold to Indians and non-Indians, and liens can be placed against the land title to collateralize loans. Trust lands, both tribal and individual, cannot be alienated and therefore generally cannot be used as collateral against loans.[29]

The burden of trusteeship is further complicated by the fact that individual trust lands have often been inherited several times leaving multiple landowners who must unanimously

agree on land-use decisions. The website for the Indian Land Tenure Foundation explains how extreme fractionalization can arise:

> … imagine that an Indian allottee dies and passes on the ownership of the allotment to her spouse and three children. Divided interest in the land is now split between four people. Now imagine those children becoming adults and raising families of their own, each consisting of three children. When the second generation dies, and if all the grandchildren survive, then ownership is divided between all of the grandchildren. The ownership of the original allotment is now split between nine different people or possibly more depending on whether the spouses of the second generation are still alive. As each generation passes on, the number of owners of a piece of land grows exponentially. Today, it is not uncommon to have more than 100 owners involved with an allotment parcel.

With so many owners, each individual owner has weak economic incentives to coordinate investments in the land that could increase the value of the property. Moreover, the cost of getting unanimous agreement from all owners rises exponentially.

Table 8 summarizes the mosaic of land tenure types. Of 82 reservations in 1999, an average of 58.3 percent of Indian Country was in tribal trust, 29.3 percent in fee simple, and 13.9 percent in individual trust.[30]

Table 8
Land Tenure Categories on U.S. Reservations

	Land Tenure Status		
	Fee-simple Land	Trust Land	
Characteristics		Tribally Owned	Individually Owned
Legal title	Individual owner or Tribal govt. owner	U.S. government	U.S. government
Beneficial title	Same as legal	Tribe	Individual
Alienation	Can be sold to non-tribal members	Cannot be sold to non-tribal members except under unusual circumstances	Cannot be sold to non-tribal members except under unusual circumstances
Collateral options	Can be used as lien and mortgaged in standard way	Loans secured by a leasehold interest are permissible	Can be used as a lien and mortgaged with approval of U.S. govt. Foreclosed land is converted to fee-simple if it cannot be transferred within the tribe
Other issues	Land use may be subject to tribal law	Tribes may develop programs through which it executes a land lease as a lessor. The lessee can then offer up a leasehold interest as collateral, subject to U.S. govt. approval.	Beneficial title is conveyed to all descendants, often resulting in a large number of fractional owners

Source: Listokin (2006, 98–99).

Economic Consequences of Federal Control

Because the Bureau of Indian Affairs must approve or disapprove contracts for land use held in trust, the added cost of negotiating contracts can suppress development and investment. Trosper (1978) was one of the first economists to formally identify the importance of reservation land tenure to agricultural productivity after the allotment era. He observed that ranches operated by Indians on the Northern Cheyenne Reservation in Montana generated less output per acre than ranches operated by non-Indians adjacent to the reservation.

He identified possible sources of the productivity difference: (1) Indians lacked technical and managerial knowledge of ranching; (2) Indians had ranching goals other than profit maximization; and (3) land tenure on reservations constrained Indians from operating their ranches at an efficient scale and from using the optimal mix of land, labor, and capital.

Trosper argues that the lower output chosen by Indian ranchers on the Northern Cheyenne is actually profit-maximizing. According to his estimates, Indian ranchers are as productive as non-Indians operating nearby ranches when accounting for the different input ratios. Given that Indian ranch managers are as technically competent as non-Indians, Trosper concludes that the effects of land tenure should be examined further.[31]

Anderson and Lueck (1992) take up this challenge by estimating the impact of land tenure on the productivity of agricultural land using a cross-section of large reservations. They benchmark the productivity of tribal and individual trust lands against those of fee-simple lands on reservations. When controlling for factors such as the percentage of trust lands managed by Indian operators and whether the tribe was indigenous to the reservation area, Anderson and Lueck estimate the per-acre value of agriculture to be 85–90 percent lower on tribal trust land and 30-40 percent lower on individual trust land. They attribute the larger negative effect of tribal trust land to collective action problems related to communally managed land. In addition to having to overcome BIA trust constraints, agricultural land held by the tribe is subject to common-pool resource management incentives that can lead to exploitation and neglect.

The U.S. Congress has authorized some noteworthy land reforms, but, for the most part, their impacts have not been rigorously studied by economists. One such reform is the Indian Long-Term Leasing Act of 1955, which increased the length of allowable leases of trust land for some tribes. Akee (2009) finds evidence that the increase in allowable lease tenure caused a

significant increase in land values and in commercial and residential development on tribally owned trust land on California's Aqua Caliente reservation. This result suggests that the inability of tribes to commit to long-term leases elsewhere has hindered their ability to gain from commercial interest in their land.

BIA trusteeship goes beyond land management alone to include other natural resources such as coal, oil and gas, and timber. Just as it has thwarted more productive use of land, trusteeship has limited the ability of tribes to manage and profit from other resources. Though federal paternalism has been described as a responsibility "to protect Indians and their resources from Indians" (American Indian Policy Review Commission on Reservation and Resource Development, quoted in Morishima 1997, 8), there is ample evidence that the BIA has failed to be a good guardian, not the least of which was the 2009 settlement of the long running class-action lawsuit in *Cobell vs. Salazar*. The plaintiffs claimed the U.S. government mismanaged Indian trust assets, including money deposited in trust accounts, and therefore owed the beneficiaries billions of dollars. Eventually the government settled for $3.4 billion, likely a small fraction of what was actually lost.

To give tribal governments more control of their assets, Congress passed the Self Determination Act of 1976 (Public Law 93-638) and later the Self-Governance Demonstration Project Act in 1988. Under this legislation, the Confederated Salish and Kootenai Tribes (CSKT) on the Flathead Reservation became one of ten tribes to have more management autonomy. Finally in 1995, the confederated tribes' forestry department compacted with the BIA to take control of forest management decisions on the Flathead Reservation.

Berry (2009) documents the success of the experiment in fiscal federalism on the Flathead Reservation by comparing tribal forest management with U.S. Forest Service

management on the neighboring Lolo National Forest. Not only did she find that the CSKT earned more that $2 for every $1 spent compared to the U.S. Forest Service just breaking even, Berry documents that timber quality, wildlife habitat, and water quality were all better under tribal management. In her words, “Since the CSKT rely on timber revenues to support tribal operations, they have a vested interest in continuing vitality of their natural resources. . . . The tribes stand to benefit of responsible forest stewardship—or bear the burden of mismanagement” (2009, 18).

Berry’s results mirror those of Krepps (1992) and Krepps and Caves (1994). According to Krepps (1992, 179), “as tribal control increases relative to BIA control, worker productivity rises, costs decline, and income improves. Even the price received for reservation logs increases.”

Tribal versus Federal Protection of Culture

Federal trusteeship of Indian land and resources does not comport with fiscally optimal federalism on almost all dimensions. It takes control of resource use decision out of local hands where information about the value of output and production techniques is greatest and removes the incentive for innovative management by local leaders. Moreover, by putting control at the federal level, trusteeship raises the cost of holding the trustee accountable to the beneficiary as *Cobell vs. Salazar* clearly illustrates. All of these reasons—information, incentives, and accountability— call for devolving resource decisions to a lower level of governance, perhaps even to the individual resource owner in the form of complete privatization.

One dimension on which trusteeship may benefit tribes is through its restraint on alienability. Typically economists view restraints on alienation as a limit on the potential to gain

from trade. Because trust lands cannot be alienated, parcels cannot be sold to producers who might value it more, consolidated to take advantage of scale economies except through leasing, or used as collateral in capital markets.

These restraints on alienation, however, do come with a benefit not captured in individual trades, because restraints on alienation may help preserve customs and culture. Consider, for example, zoning rules that limit alienability for certain uses. Though such rules may disallow more valuable land uses, they can preserve the character of community. Without them, individual owners would be faced with the "prisoner's dilemma."

In the context of American Indians, McChesney (1992, 120) puts it this way: "*A priori*, the individual Indian owner of land may be in a prisoner's dilemma, the dominant strategy being to sell, even though all would be better off agreeing not to sell to preserve an Indian way of life." If an individual Indian sold his or her land to a non-Indian who did not share the same cultural norms, the costs of tribal collective action could rise. If cultural assets—preserving the "Indian way of life"— have value, that value is best assessed at the tribal level where local information can give a more accurate measure of the cultural asset's value and where collective agents can be better held accountable optimizing that value.

McChesney (1992) points out that preservation of the "Indian way of life" may explain restricting alienation to non-Indians, but that it does not explain why alienation should be restricted on all reservations by the federal government rather than leaving that decision to local tribal governments who better understand the costs and benefits of alienation. A proposal by Canadian First Nations to change the Indian Act would let individual bands decide if they want out of Canadian federal trusteeship so that bands can decide for themselves to what degree they

want collective ownership or private ownership. Under such self-determination, bands could decide if they want to limit alienation to non-band members (see Flanagan et al. 2010).

Getting from Here to There

When the U.S. Supreme Court placed Indian relations in the hands of Congress in the 1830s, the prospects for optimal systems of federalism for Indians greatly diminished. Rather than optimizing the locus of collective action by balancing the benefits of scale economies through collective action with information and agency costs, Indian policy has mainly been determined by Congress and its agencies with too little input from the Indian people.

This top-down control stifles the possibility of building on a long history of *de facto* bottom-up federalism within most tribes. American Indian history is a history rich in property rights and governance institutions consistent with customs and culture and compatible with the resource constraints they faced. For example, in pedestrian times, bison hunting tribes were organized into larger groups necessary to achieve the scale economies necessary to drive bison into surrounds or over jumps. When the horse arrived on the scene, the efficient size of the group was reduced as a few proficient horsemen could supply bison to smaller family and clan units (see Anderson 1995). Once confined to reservations but before allotment, American Indians were proving they could adapt their institutions and be productive with the resources at hand (Carlson 1981).

Even if the best of intentions are attributed to the reformers who championed the Allotment Act of 1887, namely to assimilate Indians into non-Indian culture and empower their productivity through the incentives inherent in private ownership, the passage of that act raised the costs of bottom-up fiscal federalism on reservations. As Roback (1992, 23) concludes:

> The allotment policy did not institute private property among the Indians; instead it overturned a functioning property rights system that was already in place. . . . Allotment failed because it privatized the land among individuals without understanding the existing family and tribal structure or the property rights structure that accompanied it.

In other words, allotment failed to understand a key principle of fiscal federalism, namely that local knowledge is a strong argument in favor of local control.[32]

Allotment perpetuated the guardian-ward relationship between American Indians and the federal government, leaving tribes with little opportunity for finding an optimal balance between local governmental control and top-down bureaucratic management. To be sure, perpetual trusteeship has prevented the transfer of even more land from Indian Country to non-Indians and thus helped to preserve local culture, but that benefit has come at a high cost. To whit, the literature described here suggest that returns from land and natural resources are lower than they would have been.

American Indians have called for self-determination for decades, but a heavy hand from the top down has limited opportunities. When such opportunities have arisen, as in the case of forest management, tribes have proven they can do it themselves. Moreover, true self-determination includes the freedom to voluntarily give up sovereignty, which may encourage business with non-tribal companies and customers as the evidence of increased income growth under P.L. 280 presented here suggests. However, there remain questions about what it really takes for a tribe to credibly limit its own sovereignty, and the ability of individual tribes to select into or opt out of P.L. 280 in piecemeal ways has been constrained by state governments which

have too often offered tribes all-or-nothing choices. Either they fully commit to a completely sovereign tribal law enforcement and court system that matches tribal norms and customs but raises the costs of doing business with non-Indians, or they accept state jurisdiction which facilitates contracting with non-Indians, but does not match tribal customs and norms, particularly with respect to criminal law enforcement.

The principles of fiscal federalism offer a blueprint for how tribal governments should think about the importance of their sovereignty and the necessary limits on it. Should Indian lands and other natural resources remain under the trusteeship of the federal government? Should tribes limit alienation of land to non-Indians? Should tribes seek to transfer ownership of individual trust land to the tribe? Should legal disputes on reservations remain the domain of tribal courts or be transferred to larger nodes of government? Should the sovereign power to tax or regulate non-Indians on reservations be limited? Answering these and other questions regarding the appropriate level of governmental control is what fiscal federalism and self-determination are all about.

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ENDNOTES

[+] Terry Anderson is President, Property & Environment Research Center (PERC) and Senior Fellow, Hoover Institute. Dominic Parker is Assistant Professor, Dept. of Agricultural and Applied Economics, University of Wisconsin. For helpful comments, we thank Richard Todd, Paul Glewwe, Ben Simon and participants at the Minneapolis Federal Reserve's Law and Economics of Indian Country Economic Development Conference (August 2012) and the Society of Government Economists Annual Conference (November 2012).

[1] What is "best" for tribes is, of course, difficult to define and measure just as it is difficult to define and measure what is "best" for populations within municipalities, counties, or states. In the public finance literature the typical approach has been to study the optimal division of responsibilities in a federal system assuming the goal is to maximize the public's welfare within a particular jurisdiction (see McKinnon and Nechbya 1997). Applying this reasoning to reservations, we can imagine a division of responsibilities that maximizes the welfare of a representative tribal resident.

[2] As North (1981) and Alesina and Spolare (2003) point out, local control allows rules, laws, and property rights befitting local culture to evolve without interference from outsiders.

[3] According to 2006-2010 U.S. Census Reports, only six reservations have American Indian populations exceeding 10,000. After the Navajo Reservation, which has a population of 169,321, the population of the next largest reservation – the Pine Ridge - is 16,906.

[4] For a discussion of how local tribal property management can improve resource use, in this case forests, see Berry (2009).

[5] In some instances tribes have essentially been offered all-or-nothing opportunities to go under state jurisdiction and these all-or-nothing choices are suboptimal for tribes given the texture of case-specific tradeoffs between local and centralized control.

[6] Some reservations within Minnesota, Oregon, and Wisconsin were excluded from P.L. 280 and therefore retained tribal jurisdiction.

[7] With respect to the assumption of civil jurisdiction, it is important to note that P.L. 280 did not give states authority to impose taxes on reservations nor did it give states the authority to regulate reservation land use (Goldberg-Ambrose 1997). Regardless of whether or not a reservation is subject to P.L. 280 legislation, tribes retained their authority to impose taxes on tribal members, and to regulate land use within reservations. A tribe's flexibility to regulate land use, however, may be restricted by U.S. federal trust constraints on land as described in the following section.

[8] These disclaimers were required by the federal government as prerequisites to gaining statehood for any state not part of the Union as of 1881 (Wilkins 2002). The disclaimers were apparently in response to a U.S. Supreme Court ruling that states could adjudicate crimes committed on reservations by non-Indians against non-Indians. The forced disclaimers were meant to ensure federal jurisdiction over such crimes (Wilkins 2002).

[9] This helps explain why there is some controversy and objections to state jurisdiction over contracts and commercial activity, which also may lie outside tribal norms.

[10] Cooter and Fikentscher note that written commercial laws are absent on some reservations and legal codes are often not available in public places when they exist. Where there is precedent, "tribal judges seldom document their decisions in writings that outsiders can access" (p. 31). Similarly, Haddock and Miller (2006, 211) note that "vastly fewer cases have been litigated under tribal law" giving investors less precedent to rely upon, and "tribal precedents

often have been poorly recorded, making the relatively sparse body of tribal precedent difficult for investors to discover."

[11] Our focus was not on criminal jurisdiction.

[12] We measured acculturation by the percentage of reservation populations that were non-Indian and by the percentage of reservation residents speaking a native language.

[13] This account differs from Goldberg's earlier writings. Golderg-Ambrose (1997, p. 50) dismisses the idea that Congress "knew or cared about the Indians' readiness for state jurisdiction." Furthermore, she notes "it is difficult to reconcile this theme of advanced acculturation with the prevailing notion that state criminal jurisdiction was necessary because Indians were disorderly and incapable of self-government." The possibility that Congress targeted economically successful and acculturated Native Americans for state jurisdiction is not addressed in Goldberg and Singleton's (2008) analysis of the adverse impacts of state criminal jurisdiction on reservations. We infer that she now believes the issue of acculturation to be a potentially important source of selection bias with respect to income growth on reservations, but not with respect to the satisfaction of tribal members with state criminal enforcement.

[14] Some of the analysis that follows is also presented in Parker (2014).

[15] The 1950 U.S. Census reports summary information about incomes earned on Indian reservations but those data are aggregated up to a small number of large reservation areas and this makes the 1950 data not suitable for statistical analysis. Similarly, the 1960 U.S. Census also reports aggregated data for American Indians on reservations.

[16] The 2010 data come from the American Community Survey (ACS) which differs from the earlier decennial reservation census reports in certain ways. For geographic areas with populations less than 20,000, the ACS reports 5-year estimates (i.e. 2006-2010 averages). Because of this, the only data available for most reservations are the 5-year estimates which are what we use in our analysis.

[17] Ideally we would prefer to include the per capita incomes of counties adjacent to reservations as we did in Anderson and Parker (2008) but the census first reports per capita income at the county level in 1959. The data on per capita income at the state level are from the Bureau of Economic Analysis and are available for 1929 to 2010.

[18] More specifically, this variable aggregates the number of oil and gas wells drilled on reservations in the five year period preceding each year for which we have income data. We use this procedure because oil and gas drilling may have lagged effects on income due to the flow of oil and gas that subsequently occurs. For 1999, for example, the variable indicates the number of well drilled during 1995-1999 divided by a reservation's 1999 American Indian population.

[19] Prior to the Indian Regulatory Gaming Act of 1988, casino gaming on reservations was virtually non-existent (Cookson 2010).

[20] For example, the column 2 coefficient of 0.273 indicates that an increase of state per capita income of $1.00 is associated with a $0.273 increase in per capita incomes of American Indians living on reservations in the state. To put the 4248.7 coefficient on the oil wells variable into perspective, consider that the mean number of wells drilled per capita changed from 0.065 in 1999 to 0.186 in 2010 for the eleven oil endowed tribes in this sample. The 4248.7 coefficient therefore implies an increase of $514 in the per capita income of residents on reservations with oil and gas endowments. To put the column 2 coefficient of 1662.6 on the slot machines variable into perspective, consider that the mean number of slot machines per capita increased from 0.23 to 0.37 from 1999 to 2010. The 1662.6 coefficient therefore implies an increase of $232.8 in per capita income.

[21]To put the estimates in the context of percentage growth, we have also estimated the Table 4 specifications using the log of the dependent variable (not shown here but available on request). Those regression results show that state jurisdiction is associated with 26 percent to 67 percent increases in per capita income depending on the specification.

[22] Kuhn and Sweetman (2002), for example, find evidence that having more white blood is related to higher wages among indigenous labor in Canada.

[23] Seven of the 18 balanced panel reservations that are omitted by this criterion are located in Arizona. Other reservations that are omitted by this criterion are located in New Mexico, Utah, Colorado, Oregon, Idaho and South Dakota. A full list is available from the authors upon request.

[24] The conclusions we draw from table 4 and 6 differ from Dimitrova-Grajzl et al. (2014a), who use a sample of U.S. counties containing American Indian reservations to show that the adoption of P.L. 280 is correlated with relatively lower median family incomes over 1949-1979. Because their income data include white and Native American families, and families living on and off reservations, we do not consider the findings to be comparable.

[25] Evidence that demonstrates plausible channels from state jurisdiction over contracts to faster income growth on reservations is accumulating. Parker (2012), Dimitrova-Grajzl et al. (2015), and Brown et al. (2015), for example, find higher rates of credit use on reservations governed by P.L. 280, and Cookson (2014) finds evidence of greater capital investment in the counties of reservations that are under state jurisdiction. Although only suggestive, these studies are consistent with our reasoning that state jurisdiction, on average, makes non-Indian investors and creditors more willing to contract with tribal members.

[26] Goldberg et al (2008, 8-11) lists 29 tribes as undergoing partial or full retrocession. Sixteen of these are sparsely populated tribes in Nevada. Of the remaining thirteen cases, nine cases were partial retrocessions.

[27] Trust fund management was ultimately the focus of a major class action law suit, *Cobell v Salazar*, filed against the federal government. For a brief discussion see Anderson (2012).

[28] In general, allotment is criticized because it transferred land from Indian to non-Indian ownership (although some land cleared for fee simple ownership remains Indian owned), but, in the context of fiscal federalism, the issue is one of jurisdiction. Land transferred to fee-simple ownership is removed from tribal jurisdiction, and land held in trust, known as Indian Country, is technically under tribal jurisdiction, but subject to the trust authority of the federal government.

[29] There are some exceptions through programs that allow foreclosure on trust lands so that they can be converted to fee simple with the consent of the secretary of the U.S. Department of Interior and allow the long-term leasing of trust land.

[30] The source is Anderson and Parker (2008) and the authors' data.

[31] Trosper also dismisses the claim that Indians on the Northern Cheyenne do not seek to maximize profits. His data suggest that Indian ranchers used inputs efficiently.

[32] See Frye and Parker (2016) for a recent discussion of the benefits of local, tribal control versus non-local federal control. They provide evidence that tribes who opted into more federal control through the Indian Reorganization Act (IRA) of 1934 have had slower average income growth since the 1930s when compared to tribes that chose non-IRA, local governance.