Political Institutions, Constitutional Change, and Economic Development –
Evidence from the Constitutions of American Indian Nations [*]

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Abstract

This paper presents an empirical examination of economic and institutional development. Utilizing a novel data set on American Indian tribal nations, we investigate how constitutional design affects economic development, while holding the broader legal and political environment fixed. Ordinary least squares regressions of current economic outcomes on parliamentary (versus presidential) systems of government show no effect of constitutional design. Instrumental variables regressions, using the party of the US President at the time of the tribal constitutional adoption as instrument for constitutional design, indicate that parliamentary systems have a strong positive effect on economic development. Additionally, we document changes to political institutions for many American Indian tribes from parliamentary systems to presidential ones. We attribute this asymmetric change to political economy obstacles inherent in presidential systems which reduce the incentive to provide optimal public goods such as constitutional amendments.

1 Introduction

The importance of political institutions for economic development is one of the most intensely researched areas in economics and political science of the recent years. A particularly intense debate concerns the causal effect of institutions on development, the persistence of institutions, and the determinants of institutional change. Are institutions a fundamental driver of long-run development, or are they affected and changed as a consequence of development? How severe is reverse causality from economic development to institutional change. Do inefficient institutions persist, or are they eventually changed in order to achieve higher economic performance?

One important strand of this literature focuses on the effects of political institutions for public policies and economic development. **??**Persson and Tabellini (2003, 2004) estimated the effect of different forms of state and electoral rules on central government expenditures, redistribution, and debt using cross-country panel data. Their findings suggest that presidential systems (as compared to parliamentary systems) have lower levels of corruption and hence should provide better accountability and economic outcomes. Persson and Tabellini also examined different electoral systems and found that majoritarian systems result in smaller governments (measured by the size of government programs) than proportional systems. These findings were subsequently criticized for not being able to provide convincing causal inference on the effect of constitutions on economic performance (**?**). Using panel regressions, **?** find evidence that government institutions affect growth of newly democratized countries, with parliamentary democracies growing slower than presidential democracies. More recently, **?** investigate the effect of government form for public spending on the community level and find that public spending is lower in governments with directly elected executive (mayor-council form of government) than under indirectly elected (council-manager) governments. Their theoretical results also suggest, however, that depending on the preferences distribution either system can be preferable to the electorate.

This paper contributes to this literature by providing novel evidence for the effects of political institutions (determined by the aspects of constitutions) on economic performance. We also investigate the driving forces behind the adoption of particular institutions as well as the determinants of endogenous institutional change. The analysis is based on a newly assembled data set of American Indian tribal constitutions and amendments to these constitutions for 70 American Indian tribes with democratic governments and written constitutions. We have coded the information contained in these documents such as whether the executive is directly elected or indirectly elected as well as the year of the adoption of the first modern constitution and the years in which amendments occurred. All of these documents span the entirety of the 20th century. We merge this data with information on economic development indicators for the American Indian tribes in 1900, 1990, 2000 and 2005-2009 from the US Census and investigate the effect of political institutions on economic performance.

The structure of the data resembles the typical structure of the empirical work on the long-run effects of institutions, but has important additional features. First, since American Indian Nations are subject to the same broader institutional framework of the United States, the data provide the unique possibility of holding the legal and political environment fixed. This alleviates many of the issues that affect the cross-country panel data common in this literature. Second, while the larger legal and political environments are held constant within the US federal framework, these American Indian Nations exhibit tremendous heterogeneity in political institutions themselves. American Indian Nations have a variety of different political institutions – they run the range from theocracies to democracies to corporate structures (**?**). Even among the tribes that are democracies with written constitutions there are a wide range of differences in political institutions. Third, we have documented changes to these tribal political institutions over the course of the 20th century. We are able to investigate directly endogenous change to (or persistence of) political institutions. Fourth, the data contain an element of exogenous variation that can be exploited for identification purposes since, for some tribes, the choice of

the constitutional details was heavily influenced by the US Federal government. These constitutional details were determined without regard to the economic conditions in the particular tribes at the time of constitutional adoption. This allows us to replicate the typical identification strategy in the literature, and estimate the effects of constitutional design (and political institutions) on economic performance of American Indian Nations in modern times.

Our results suggest that there is indeed a bi-directional causal relationship between constitutional details and economic performance when comparing the results from ordinary regressions and from a credibly exogenous variation in constitutional details. Rather than looking at fiscal policy outcomes, our study focuses on development outcomes and accounts for the possibly endogeneous government-type by applying an identification strategy based on the random assignment of constitutional design through the influence of the US Federal government.

In simple ordinary least regressions, we find no effects of current political institutions on economic performance in 1990, 2000 or 2005-2009. These results are likely to be subject to endogeneity bias, however. We are fortunate to have a plausible instrumental variable which allows us to eliminate the endogeneity bias. The party of the US President at the time of adoption of the American Indian is directly related to the type of political institution adopted in the initial constitution; we describe, in later sections, how this is a plausibly exogenous relationship and use this as our instrumental variable. Results from this analysis indicate that political institutions do affect economic performance. In particular, tribes with indirectly elected chief executives have significantly higher per capita incomes, better labor force participation rates, lower unemployment and better infrastructure in the 1990, 2000 and 2005-2009 data. Overall, this indicates a significant benefit in economic development measures to having a parliamentary system for those American Indian governments that comply with their initialy assigned institutions. Similar results are obtained when instrumenting constitutional design in 1990.

The data also document constitutional changes subsequent to the initial assignment, however. Changes occur frequently and validate our initial concerns about endogenous effects of constitutional change and political institutions. The observed changes only occur from indirect elected chief executives to directly elected chief executives over the course of the 20th century. These endogenous changes are likely the result of an interplay between political economy mechanisms that have to do with the incentives and political obstacles for changing political institutions from parliamentary to presidential systems. Specifically, we discuss in later sections that the amendment process of constitutional reform is a type of public good, which has been theoretically and empirically documented to be underprovided in presidential systems. Therefore, our findings that there are no changes in political institutions from presidential to parliamentary systems can be explained due to these political economy obstacles inherent in the initial political institutions.

Our paper relates to the literature on the determinants of political institutions, and the persistence of institutions over time, pioneered by **??**Acemoglu and Robinson (2000, 2001) and **?**. This literature suggests that political institutions are shaped by self-interests of different groups of society as well as by constraints on the possibility of political rulers to commit to certain policies. As result, institutions emerge endogenously but do not necessarily reflect the institutional design that would lead to efficient economic outcomes. As a consequence, inefficient institutions may persist as long as the ruling elites have an incentive maintain them against any tendencies for reform (Acemoglu and Robinson, 2006, 2008). The case of American Indian Nations provides a nice environment to study the endogenous adoption of institutions when exogenous constraints, rather than conflicts of interests, shape the particular institutions in place. Moreover, the finding that constraints in the adoption of constitutional details and the subsequent changes that amend the constitutions provide evidence that complements recent evidence on the so-called critical juncture hypothesis, according to which institutions reflect the conditions during the period of their implementation, with long-run consequences for economic performance (see, e.g., **??**Acemoglu et al., 2008, 2009, for evidence in the context of income and democracy). The evidence presented in this paper suggests that the negative effects of critical junctures on economic

performance can be mitigated in cases where institutions can be amended appropriately to reflect the economic environment.

There is a small, but important literature on the effect of contemporaneous constitutional characteristics on economic development for American Indians. Our paper contributes to this literature pioneered by ???Cornell and Kalt (1995a, 1995b, 2000). We add an additional dimension of constitutional change (as well as the initial types of constitutions adopted) to the analysis. While we do not explicitly focus on the "cultural match" of present-day constitutions and the particular tribe, the observed endogenous changes to constitutional-type is certainly consistent with their findings of Cornell and Kalt.

Finally, our paper also adds to the growing literature on the effect of political institutions on economic development and the provision of public goods in developing countries. There is evidence that increases in electoral accountability significantly reduces politician corruption. In Brazil, ??Ferraz and Finan (2008, 2009) find that electoral rules which increase accountability (the possibility of re-election) results in reduced corrupt behavior. They also find that voters respond to evidence (published audit reports of mayoral budgets) about politician behavior and punish more corrupt incumbents at election time.

The remainder of the paper proceeds as follows. The next section provides some background information on American Indian Tribal nations and discusses the data and sample construction. Section 3 presents the empirical strategy, and Section 4 presents the main empirical results and additional results from robustness checks. Section 5 presents evidence for changes in the constitutional design, and discusses the implications of these changes for the results. Section 5.3 concludes.

2   Data on Constitutions of American Indian Nations

2.1   Historical Background

American Indian Nations are a third form of government recognized in the US Constitution along with the US Federal and State governments (?Duthu, 2008). Indeed, the US Constitution treated many of the American Indian Nations as foreign nations at least at the time of the establishment of the United States. Over the past two centuries, the US Supreme Court has ruled that American Indian nations are a separate form of government from that of US states, but they have been put under the US federal government's authority and are now classified as "domestic dependent nations" (?Wilkins, 2002). Today there are over 560 federally recognized American Indian tribal nations including Alaska Natives. These nations have a direct government-to-government relationship with the United States. There are numerous non-federally recognized tribal governments, but we do not consider these tribal governments in our current analysis.

By 1871, the US unilaterally ceased making treaties with American Indian nations (?Duthu, 2008). This marks a turning point in the US relationship with American Indian tribes; the tribes were treated as domestic entities and not the foreign, independent entities of the past. These changes were driven in part by the settlement of much of the continental United States as well as the increased military power of the US. In the 1887 the General Allotment Act was created to privatize and develop American Indian lands. The purpose was to transform the American Indian into farmers and small business owners with access to private property and capital. Previously, the American Indian land had been held communally by the entire tribe and was inalienable as well as tax-exempt given the sovereign status of American Indian tribes. The land privatization was a complete failure and reduced the amount of land under American Indian control in 1887 from approximately 138 million acres to about 48 million acres in the early 20th century through coerced land sales, foreclosures and delinquent tax payments (?Newton et

al, 2005). No corresponding improvement in economic or social conditions for the American Indian land owners was visible; in fact, **?** have shown that child mortality increased significantly for households that received allotted lands. Additionally, the US Supreme Court ruled in the 1903 court case Lone Wolf v. Hitchcock that the US Congress has plenary power over American Indian lands (**?**Duthu, 2008). While the US Constitution discusses American Indian tribes in two places, neither grants Congress plenary power over the tribes (**?**Deloria and Wilkins, 1999). This new Supreme Court interpretation allowed Congress to unilaterally suspend any and all treaty promises without review or redress by American Indian tribes.

In practice both federally and non-federally recognized American Indians are US citizens as well as tribal nation citizens (**?**Wilkins, 2006). Federal income tax laws apply to individuals residing on the reservation, but the tribal government itself may be exempt from state and other local jurisdictional laws and taxation (**?**Wilkins, 2002; p. 14). The American Indian nation itself has sovereign immunity and has the ability to establish its own taxation and laws that are not expressly forbidden by the US Congress. This relationship between the US government and American Indian tribal nations is based on historical treaties and political relationships during the age of expansion and westward settlement in the US. Preceding the establishment of the US constitution, several American Indian nations had clearly established constitutions and rules of governance, for example the so-called Five Civilized Tribes (**?**Deloria & Lytle, 1983). In this work, we examine the promulgation and adoption of modern constitutions in American Indian nations after the age of US westward expansion and the establishment of reservation based American Indian Nations at the beginning of the 20th century.

Overall the history of American Indians in the United States has been one of poverty and substantial underdevelopment. Lands under American Indian control in the continental United States amounts to approximately fifty six million acres or about 4 percent of all US lands (**?**Wilkins, 2002). Recently there has been some improvement in economic conditions; real per capita income has increased by 33% between 1990 and 2000 for American Indians residing on reservations. Additionally, family poverty rates have fallen about 10 percentage points between 1990 and 2000 (48% to 37% for tribes without casino operations and 36% to 27% for tribes with casino operations), see **?**. Our research aims to investigate the political determinants of these improvements in economic outcomes.

2.2   American Indian Constitutions

The history of American Indian constitutional change provides a very interesting case for studying the impact of political institutions on economic development. The composition and nature of the initial constitutions adopted by most American Indian tribes was not necessarily of their own doing. The Bureau of Indian Affairs played a very important role in the design of many of these tribal constitutions. Templates of the important clauses and sections of constitutions were distributed to tribes via the Bureau of Indian Affairs (**?**Wilkins, 2006; **?**Cohen, 2006). The starting point of most American Indian tribal constitutions was not from pre-existing governance systems, but a US-inspired version. These imposed, and to the American Indian nations somewhat foreign, political institutions did not necessarily reflect traditional or moral tribal values and led to high levels of political turmoil and corruption in tribal government activities (**?**Cornell and Kalt, 2000). Due to the perceived illegitimacy of some of these government types, tribal governments have faced a range of problems such as political instability, government closure and attacks on government officials (**?**Lemont, 2006; p 3). While a few American Indian tribes had constitutions in the 1800's, many of these tribes were forcefully relocated by the US Federal government and resulted in a disruption of these pre-existing governments (**?**Wilkins, 2002). Consequently, new constitutions were adopted in the early 20th century to reflect the new geographic, political and economic conditions for these American Indian tribal nations. Several changes occurred at the end of the 19th and beginning of the 20th centuries with regard to the US Federal government's

relationship and dealings with American Indian tribes. After the conclusion of the US Civil War, the US Federal government moved the Bureau of Indian Affairs from the War Department to the new Department of the Interior signaling a change in the threat level associated with American Indian tribes (**?**Wilkins, 2002).

2.3   Data Sources

For this study, we collected American Indian constitutions and their amendments for over 70 American Indian nations. One criterion for selecting these American Indian nations was that they had to have a sufficiently large population for political engagement. There are over 560 federally recognized American Indian and Alaska Native nations in the US. A large proportion of the federally recognized tribes have tribal populations that number only a few hundred people. Therefore, we restricted our analysis to the large tribes with at least 1,000 members. The smaller tribal nations were omitted for several reasons. The first is that generally the smaller tribes have less resources and operate on a more informal basis; family and clan relationships tend to dominate in these particular tribes. Second, many of these smaller tribes do not have a formal, written constitution. In fact, in the current analysis we omit all tribes with unwritten legal and political codes. This necessarily eliminates tribes such as the Navajo Nation which operate on an unwritten, traditional code of governance. We have also omitted the theocracies and corporate governance structures. These more complicated forms of government will be investigated in future work. To be clear, our research examines only American Indian governments that have democratic forms of government, a written constitution and have a population of more than 1000 citizens.

We compiled the constitutional documents from publicly available sources and locations. The National Indian Law Library, which is part of the Native American Rights Fund, has an extensive collection of constitutions online. Additionally, the University of Oklahoma law library also provides a large collection of American Indian constitutions. We found amendments to the constitutions by direct contact with the tribes, their websites and various inter-library loans from individual law libraries across the country. Finally, we examined constitutions at the Bureau of Indian Affairs in Washington, DC where a number (but not all) of the constitutions are archived.

In total, the data are based on approximately 450 different files or documentation regarding the constitution or the amendments. We coded the initial political institutions contained in the constitutions and recorded the changes made to these constitutions as well as the year in which they were made. For the purpose of the present study we focus on a central element of the tribal nation's political institution -whether the chief executive is elected indirectly or directly. There are several channels through which the way the executive is elected might affect economic outcomes. A more directly accountable executive has a higher incentive to increase overall welfare benefitting the entire electorate. At the same time, direct accountability is likely to reduce nepotism, inefficient use of public resources, and corruption (see, e.g., **?**Persson, Roland and Tabellini, 1997, or **?**Alt and Lassen, 2007). In the context of the cross-country literature, this resembles the accountability of the executive to the electorate, roughly comparable to the political regime in terms of a parliamentary or a presidential system in cross-country panel data. The data also contain information about other political institutions such as staggered terms and an independent judiciary.

We merge the constitutions and amendment data with census data from the 1900 US Census at the tribal government level. This data is available from the Minnesota Population Center IPUMS website and represents a 20% sample of American Indians by the US Census Bureau. The data contains characteristics of the reservations prior to the adoption of their modern constitutions. The variables, while somewhat limited and not perfectly comparable to recent data from the US Census, are nevertheless useful as control variables for the regressions that follow. As outcome variables, we

use data from more recent waves of the US Census (1990, 2000, and 2005-2009 American Community Survey).[1] In particular, we have selected five variables that reflect economic development on American Indian reservations: per capita income, percent in the labor force, percent of homes with no plumbing facilities, unemployment rate and percent of the population with a high school degree or more. The variables therefore allow for a useful examination of important economic development characteristics on American Indian reservations.

2.4   Descriptive Statistics

In Table 1 we present the means and characteristics of our sample data. The first panel in Table 1 provides information on the main outcome variables of interest in our analysis for the year 1990. Average per capita income is approximately $5,100 in 1990 which is significantly lower than the US average of $19,374 (?Kalt and Taylor, 2005). American Indian reservations on average are much less developed than the rest of the United States. For instance, the percent of adults in the labor force on reservations in 1990 is 57% and has a minimum amount of just 36%. On average 5% of homes on American Indian reservations lacked adequate plumbing facilities; however, there are some reservations where the percentage is as high as 47%. The unemployment rate is a useful measure of the economic conditions on the reservation. Individual American Indians, of course, have the option to work off of the reservation; we view this as a proxy for economic activity on and around the American Indian reservation. In 1990 the average rate of unemployment was approximately 23% with ranges as low as 4% and as high as 44%.

On average, 63% of adults on the American Indian reservations have a high school diploma or higher. We include this measure of human capital in order to identify an additional dimension of economic development on the reservations. There is quite a large range of values across the different tribes with respect to this variable; on certain reservations only a third have a high school diploma or more, while on others almost 90% have a high school degree.

In panel B, we provide the variables from the 1900 US Census for the American Indian reservations. While the data for this time period is limited, there are several useful variables that provide some indication of the levels of economic development on each reservation prior to the adoption of the initial modern constitutions. In 1900 the average age is approximately 26 years; the population is highly skewed towards the young which is characteristic of developing countries. The male-female ratio is roughly equal on average across the different reservations in 1900. Approximately 40% of the adults on the reservations were married in 1900. The percent of adults in the labor force in 1900 is approximately 20% on average. The labor force variable does not include self-employed farmers, which may explain this relatively low labor force participation rate. Approximately 17% of the population of an average reservation is literate in 1900. The literacy variable is a useful proxy for education and general skill levels of the population. Again there is tremendous heterogeneity across tribes with some tribes reporting no literate individuals and other tribes with literacy rates of almost 50%.

While we do not have a direct measure of individual incomes in the 1900 census,[2] we do have a measure of occupations. Conveniently, previous researchers and census bureau officials created an index of these occupations and ranked them according to their wages. The occupation-income index measure is an imperfect measure of income on the American Indian reservations in 1900 but it is the best available data. We took a simple average of all employed people on the reservation and the mean

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[1]Unfortunately, the US Census Bureau did not collect separate data for American Indian reservations for most of the 20th century; the census geography captures modern reservations starting in the 1990 census. Therefore, we are unable to examine economic outcomes earlier than 1990.

[2]The US Census Bureau began asking individual income information only starting with the 1940 US Census.

value is 5.6, the minimum and maximum values are 0 to 13.7. We view this occupational index measure as an ordinal measure of average income on the reservations.

The 1900 US Census contains an interesting variable which is not present in current census data - the percent of intermarriage between American Indians and non-Indians. While this is a somewhat unusual variable it does provide a proxy measure for the degree of intermixing between the American Indian tribe and the surrounding non-Indian community. Additionally, we view this variable as a measure of social integration across the two groups. The average percent of white blood in our sample of reservations is 9%. There is a lot of heterogeneity with certain tribes having no intermixing and some that have over 40% white blood.

The next set of variables indicate the geographic location of the tribal reservation in five different census regions in the lower US. There are no Eastern American Indian tribes included in this data. As mentioned previously, we have restricted our analysis to the larger, federally recognized American Indian tribes with written constitutions and this necessarily excludes the Eastern tribes.

Panel C of Table 1 provides information about the tribal constitutions and their amendments. At the time of the initial adoption of the constitution, approximately 43% of the tribes had a directly elected chief executive; by 1990 that percentage had increased to 70%. The alternative to a directly elected chief executive is an indirectly elected executive where the tribal council decides from among its own members who will be the chief executive. About 29% of the tribes in our data changed from an indirectly elected tribal chief executive to a directly elected chief executive. Over the same time period approximately 34% of tribes adopted a staggered election cycle and 36% of tribes amended their constitutions to include a judicial branch. The average year of adoption of the original constitution takes place in 1942. Approximately 21% of the constitutions were adopted under Republican administrations.

In Table 2 we compare the tribal characteristics from the 1900 US Census for the tribes that adopted a constitution under a Republican or Democratic US Presidential administration; we will exploit these differences in party of the US President at the time of adoption of the American Indian constitutions as an exogenous determinant of political institutions. We compare the means of the 1900 characteristics between the two types of tribes and find that none of the characteristics are statistically significant at the 5% level. The variable for total white blood is statistically significant at the 10% level, however, and indicates that tribes that have adopted a constitution under a Republican presidential administration tend to have higher levels of white blood in 1900 on average by about 5 percentage points. Importantly, the two types of tribes do not differ along the other economically meaningful variables such as the occupational-income index score, literacy rates and labor force participation rates.

3   Empirical Framework

This section discusses the identification problem as well as different empirical strategies to identify the effect of political institutions on economic performance.

3.1   The Estimation Problem

The goal of this paper is to investigate the potential effect of constraints on constitutional design on economic development. The typical framework used in the literature to estimate this effect is given by

$$Y_{i1} = \beta I_{i1} + \gamma X_i + \varepsilon_{i1} \tag{1}$$

where Y denotes one of five separate measures of outcomes reservation i at time $t = 1$, which corresponds to outcomes measured in 1990, 2000 or 2005-2009. These outcome variables include per capita income, unemployment level, percent of adults with high school education or more, percent in the labor force,

and the percent of homes with no plumbing facilities. The vector X includes controls for characteristics of the reservation in 1900, that is, prior to the adoption of the first modern constitutions. In particular, the vector contains the following characteristics of the reservation: average age, share women, marital status, labor force participation rates, measure of intermarriage, occupational-income index measure, and literacy rates. Institutions I are measured as binary indicators of whether or not the initial constitution of tribe i calls for the chief executive to be directly elected in 1990 (I_{i1}). The indicator is zero when the chief executive is indirectly elected. In light of the political economy literature, a directly elected executive might imply more direct accountability of the executive, and therefore a more favorable institutional environment for economic development (see, e.g., the findings from the cross-country literature (see, e.g., **??**Persson and Tabellini, 2003, 2004). The coefficient of interest is β.

In principle, the data also contain information for the initially adopted constitutions. Assuming that β is a deep and stable parameter, an alternative estimation could therefore exploit this information at time $t = 0$,

$$Y_{i1} = \beta I_{i0} + \gamma X_i + \varepsilon_{i0} \tag{2}$$

Without additional assumptions, it is not obvious that β is actually identified in this framework, because reverse causality problems might bias the estimates. For instance, constitutions may change endogenously over time (such that I_1 might be correlated with ε_1), or if the adoption of a particular constitutional design is endogenous to the economic development prospects of a particular tribe (such that I_0 is correlated with ε_0).

3.2   Identification using Initial Assignment of Institutions

To account for the potential endogeneity problem, we employ an instrumental variables approach that exploits historical conditions in order to identify the effect of constitutional design on economic development. This is possible due to the peculiarities of the political liberalization process that American Indian tribes underwent in the late 19th and early 20th Century.

US Presidential Party and the Adoption of American Indian Constitutions. As the 19th century drew to a close the political and legal landscape changed dramatically for American Indian tribes. Previous models of informal governance were not effective in dealing with the reduction in land holdings and rights. The US Federal government reduced the standing of tribal nations to domestic-dependent nations and there began an erosion of rights and protections such as the loss of autonomy and treaty rights. In order to deal more effectively with the US Federal government and the US states, American Indian tribes began to establish centralized governments. Tribes adopted their preferred constitution based on very local and specific conditions and experiences. The reason for adoption of a constitution could be that recent experiences by the tribe have been marked by political turmoil, corruption, loss of certain resource rights or the development of natural resources. Tribal nations therefore adopt constitutions based on the immediate conditions on a reservation.

In order to establish and adopt formal constitutions, many American Indian tribes sought help and assistance from the Bureau of Indian Affairs (BIA). The BIA operates under the Secretary of the Interior and is appointed by the US President. Congress authorizes the budget of the Bureau of Indian Affairs as noted in the US Constitution and supported by numerous US Supreme Court rulings (**?**Duthu, 2008; **?**Deloria and Wilkins, 1999). Specifically, the Bureau of Indian Affairs responded to requests for assistance in drafting constitutions. **?** provides an example for the 1930s where the BIA was tasked with responding to requests for drafting constitutions; the Bureau was not empowered to seek out tribes itself. While there may have been no explicit directive, there appears to have been at least indirect influence in terms of political institutions.

Once a constitution was proposed or considered, the Bureau of Indian Affairs exerted influence and pressure on the kinds of political institutions that can be adopted. Thus, the instrumental variable for parliamentary versus presidential systems is based on the fact that the nature and type of constitution adopted by American Indian nations has been heavily influenced the Bureau of Indian Affairs, which is subordinate to the Secretary of the Interior of the US Federal Government. The approval and influence of constitution-type is therefore related to the political position of the respective US Presidential administration.

First, under Democratic leadership in the Bureau of Indian Affairs, Felix Cohen, in the 1930s, drafted a document for the writing of tribal constitutions with numerous suggestions. This memo provided extensive information on the clauses and contents of a constitution. Additionally, the document provided a model constitution in the appendix. For our purposes it is useful in that the model only contained a single type of institution for the election of chief executives - an indirectly elected or parliamentary-type system (?Cohen, 2006; ?Wilkins, 2006; ?Deloria and Lytle, 1983). Beyond this influence, the Bureau of Indian Affairs had approval power over the nature of the American Indian tribal constitutions. Our hypothesis is that under Democratic US Presidents there was a tendency to favor the adoption of the parliamentary type chief executive, while under Republican US Presidents there was a tendency to favor the adoption of the direct election of the chief executive. One reason for the difference is that there might be a difference of opinions according to political party on the idea of assimilation and appropriate political institutions. Theodore Roosevelt, a generation earlier and a Republican US President, saw the new American Indian programs such as allotment as a useful tool to dismember American Indian tribes and to transform them into American ideals. The imposition of a presidential system of government was an additional method of assimilating the American Indian tribes into the US model of governing. On the other hand, the Democrats and their administration paid more attention to the pre-existing social and political structures. Existing political institutions for American Indians resembled a more communal approach to decision-making and power sharing (?Champagne, 2006).

An Instrumental Variables Approach. In the following, we exploit these peculiarities by using the party of the US President at the time of the American Indian tribes' adoption of their initial constitution as an instrument for the constitutional design. Consequently, our first stage regression when considering institutions in terms of I_1 as in (1) is given by

$$I_{i1} = \lambda Z_i + \mu X_i + u_{i1} \tag{3}$$

while the corresponding first stage for an outcome equation as in (2) is

$$I_{i0} = \lambda Z_i + \mu X_i + u_{i0} \tag{4}$$

We use an indicator variable for our instrument, Z, that takes the value of 1 when the party of the US President at the time of the initial adoption of the American Indian constitution was Democrat and 0 when it was Republican. The outcome variable, I, indicates whether the political institution is a parliamentary system or not which takes on the values of 1 and 0 respectively.

For political and ideological reasons, Democratic Presidential administrations are more favorable to indirect democratic structures than Republican administrations. Therefore, our instrument is positively related to whether the political party of the US President at the time of adoption was a Democrat.[3]

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[3]We find no evidence that the tribes are forecasting which political party will be in power at the national level. We find that only 4 out of 70 tribes adopt a constitution immediately after a change in the US President from one party to the other; only 2 adopt a constitution within 2 years of the change in political party. Dropping these observations do not change our results.

The first stage regression is given by a linear probability model.

Constitutional amendments, on the other hand, occurred in a much later period of the 20th century when considerable power and authority was restored to American Indian tribes to make decisions about their own political structures, as described below in more detail. The period, since the mid-1960s onwards is known as the era of Indian Self-Determination. Therefore, we should view these constitutional amendments as being primarily driven by tribal preferences and less influenced by officials from the Bureau of Indian Affairs in this later period.

The maintained assumptions for identification of the effect are that the instrumental variable, Z, is not related to the error term in the respective outcome equation 1 or (2) above. There is no evidence that American Indian tribes were making their decisions about whether to adopt a formal constitution based on the political party of the US President or the executive branch appointees. Instead, the historical evidence suggests that the primary motivation for adopting a formal constitution was based on individual reservation-based conditions and was divorced from conditions in Washington, D.C. Additionally, there is no evidence that tribes attempted to game the system and wait for a different US President and a change in political appointees in the executive branch; empirically, there are no large amounts of constitutional adoptions after an election when the party of the US President changes.

Additionally, the American Indian tribes which adopted constitutions under Democratic or Republican US Presidents do not appear to differ significnatly based on 1900 observable characteristics. Table 2 presents some descriptive statistics for the tribes. The descriptives show that tribes were very similar in terms of demographic composition and labor force participation. The tribes that adopt a constitution under a Republican Presidential administration are somewhat more assimilated (in terms of the share with white blood in 1900). The difference in the two average amounts is about 5 percentage points (13% versus 8%) and while statistically significant, it is not a large differential.

4 Empirical Results

We begin our analysis by investigating the role of different election mechanisms for the chief executive on economic development outcomes. We focus on five outcome variables that are available in the US Census data: per capita income, percent in labor force, percent of homes with no plumbing, unemployment rate and percent with high school education or more. We selected these variables as they were useful indicators of economic development on the reservation. These measures are exclusive of non-American Indians residing on the reservation; we only include those individuals that are under the jurisdiction of the tribal government. Throughout, we estimate a linear probability model and use the characteristics of the tribe in 1900 as explanatory variables reflecting the term X. We present results for the different estimation frameworks discussed above: OLS, as well as 2SLS estimates using the party of the US President at the time of their constitutional adoption as the instrument for institutions at constitutional adoption, I_0, or after subsequent amendments by 1990, I_1.

4.1 Contemporaneous Constitutional Design and Economic Performance

Table 3 presents results from OLS estimates for the specification (1) for the 1990 census data. The coefficients are small in magnitude and statistically insignificant, suggesting that current political institutions have no effect on economic performance. This finding is likely to be affected by endogeneity problems, however. This might indicate endogeneity in the standard sense, implying systematic cross-tribal differences that determine institutional design and economic performance. The estimates might also be affected by endogenous changes in the institutions after the initial adoption of a constitution in response to economic performance ex interim. For instance, the estimated average negative coefficient

on directly elected chief executive might diminish as more tribes amend their constitutions towards directly elected chief executive, because they realized that this might have positive economic returns. The differential returns associated with each type of political institution are therefore statistically insignificant. Very similar results apply when considering outcome data from the census in 2000 or 2005-2009. We will return to the interpretation of these findings, and the potential links with endogenous changes in institutions between adoption and 1990, below.

4.2   Initial Constitutional Design and Economic Performance

Table 4 repeats the analysis for specification (2). In these regressions, the coefficient on having an in directly elected chief executive at the initial adoption of the constitution does not have an effect on economic outcomes in the current period. These results are similar to the findings for current political institutions given in (3). Taken together, the results from ordinary least squares regressions indicate that political institutions have little effect on economic outcomes in the future. However, one might expect there to be significant endogeneity bias in the ordinary least squares regressions due to endogenous institutional choice and change.

4.3   Instrumenting Contemporaneous Constitutional Design

Naturally, the question arises if the results are similar when specifying the outcome equation with current institutions, I_1, but estimating the effect by using the instrument of the Federal administration during the adoption of the first constitution. Such an estimation closely corresponds to the canonical framework employed in much of the literature, including, e.g., the seminal work by **?**.

Table 5 presents the respective results for estimates of an outcome equation as in (1), using the instrument of the party of the Federal administration at the time of adoption of the initial constitution in a first stage as in (3). The first stage results are given in column (1). Column (1) shows that there is a strong and statistically significant effect of having a Democrat administration for the US President on the probability that a tribe has an indirectly elected chief executive at the time of the adoption of the constitution. The F-Statistic for this instrument, Democrat Federal administration, is 10.98, and the effect is statistically and quantitatively significant, with a coefficient of 0.214.

The second stage IV estimates for the different outcome variables, measured in 1990, are presented in the other columns of Table 5. The second column of Table 5 provides the regression results with per capita income as the outcome variable. Our results indicate that when a tribe has an initial constitution with indirectly elected executive and complies with this assignment, the per capita income for that tribe is substantially (0.556 log points) higher than for an observationally equivalent tribe that did not adopt a constitution with an indirectly elected executive. The third column examines the effect of the constitutional amendment on the percentage of the current population in the labor force. The coefficient on the constitutional design variable is negative and statistically significant at the 5% level. The results indicate that having an indirectly elected chief executive results in an increase in the labor force participation of adults by about 6 percentage points. The regression in column (4) indicates that these same tribes have a reduction in the percent of the homes on the reservation with no plumbing; the result is only statistically significant at the 10% level, however. The coefficient on indirect elected executive for the unemployment regression in column (5) is positive in sign, but it is also not statistically significant. In column (6) the coefficient indicates that there is a higher percentage of people with high school education, but this effect is also insignificant. Overall, the results indicate that the tribes that adopted a parliamentary system (indirectly elected chief executive) rather than a directly elected chief executive in their initial constitution as consequence of the of the composition of the federal government, have better economic outcomes.

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Additional unreported estimates have been obtained for outcome variables from the 2000 US Census. The results, which are available upon request, are qualitatively very similar to those obtained with the 1990 data, but the estimates are quantitatively even stronger than in the 1990 case. Per capita income in 2000 for tribes that have a indirectly elected chief executive is higher than for otherwise observationally equivalent tribes, the percentage of the reservation in the labor force is larger for these tribes, and unemployment is lower. We observe no statistically significant effect on the quality of infrastructure in terms of the percentage of household without plumbing facilities, and on education in terms of the percentage of the tribal population with more than a high school education.

A third set of regression results has been obtained for outcome variables from the US Census for the years 2005-2009. In this case, we have created an average outcome for these years given the data limitations (only five year averages are released) for areas of small population in the American Community Surveys. Again, we find comparable results to those for the outcomes in 1990 or 2000, with the exception that the coefficient on education attainment in terms of the percentage with a high school degree or more is now statistically significant and positive.

The estimation results of the second stage regressions in Table 5 thus exhibit a distinct pattern from those obtained before with OLS in Table (3). 2SLS estimates in fact suggest a strong positive effect of the adoption of parliamentary structures implied by indirectly elected executives. Overall, the results of Table 5 for outcomes in 1990, and the additional results for outcomes in 2000 and 2005-2009, indicate that there is a strong positive effect of political institutions in terms of indirectly elected executives rather than directly elected executives, i.e., a constitutional type that resembles a parliamentary rather than a presidential system.

It could be that the parliamentary system allows a larger amount of flexibility, even when it is externally imposed upon different tribes, such that there is more acceptance of that form of government. Our results appear to be fairly conclusive that the parliamentary system, when externally imposed and complied with, tends to produce more positive outcomes than in the presidential system.

4.4   Instrumenting Initial Constitutional Design

Naturally, the question arises if the results are similar when specifying the outcome equation with initial institutions, I_0, rather than contemporaneous institutions, I_1, while using the same instrument. Table 6 presents results for an outcome equation as specified in (2), with a first stage (3) where initial constitutional design is instrumented using the party of the US President at the time of the constitutional adoption. As with contemporaneous institutions in Table 5, Column (1) shows that there is a strong and statistically significant effect of having a Democrat administration for the US President on the probability that a tribe has an indirectly elected chief executive at the time of the adoption of the constitution. The F-Statistic for this instrument, Democratic Administration, is 13.18.

In terms of second stage results, the findings are very similar to those in Table 5. In particular, the qualitative pattern of results for outcomes in 1990, 2000 and 2005-2009 is identical in Tables 5 and 6, but the effects are typically by about one third larger in Table 5 than in Table 6. The statistical significance of the results is also comparable.

4.5   Changes in Labor Force Participation

The only outcome variable that is observed in 1900, i.e., before the first constitution, as well as in the current time period is the labor force participation rate. This allows for an investigation not only of the level of development, but also of changes directly, while including the initial level as a control to account for convergence. Table 7 presents the respective results with the change in labor force participation as outcome in the regression analysis. The table includes results from ordinary least squares regressions,

and 2SLS estimates that instrument for the initial political institution at the time of the constitutional adoption, or for the current political institution. The results are qualitatively similar to the findings in the previous tables. There appears to be no effect of constitutional design in the OLS regressions, whereas indirectly elected executive has a significant positive effect on the change in the labor force participation from 1900 to 1990.

4.6 Robustness Checks

We conduct several robustness checks on our data in order to investigate whether other potential mechanisms are responsible for the observed outcomes.

4.6.1 Placebo Effects

We present a series of placebo instrumental variables regression in Appendix Table 1. In these regressions, we take the initial values of our control variables from the 1900 census as outcome variables. The five outcome variables are percent married on the reservation in 1900, percent in the labor force in 1900, average percent non-Indian on reservation in 1900, occupational-income score in 1900 and percent literate in 1900. The first five columns instrument for having an indirectly elected chief executive at the time of adoption of the initial constitution. None of the coefficients are statistically significant. The next five columns instrument for having an indirectly elected chief executive in their current constitution. Once again none of the coefficients are statistically significant.

4.6.2 Other Institutional Changes

In Appendix Table 2 we include the other political institutions as control variables into our main regressions. We instrument for having an indirectly elected chief executive at the time of the adoption of the initial constitution and add in the other potential institutions as right hand side variables. The presence of judiciary has a positive and statistically significant effect on log per capita income, however, the instrumented indirect elected chief executive variable is still positive and statistically significant. We find that having a directly elected legislative council also has a positive effect on log per capital income and that the coefficient on the insturmented indirect elect variable continues to be positive and statistically significant. We do not find that the other institutions such as staggered election terms, differences in term lengths, tribal council size or the operation of a casino have a significant effect on log per capita income. Importantly, inclusion of these other variables do not affect the statistical significance of our main variable of interest - indirectly elected chief executive.

4.6.3 Years Since Constitutional Adoption

Appendix Table 3 provides a similar instrumental variables analysis for the 1990 outcomes with the addition of a years since constitutional adoption. Our rationale for including this variable is that the number of accumlated years of governing experience may be have a causal effect on current economic outcomes. Inclusion of this variable does not completely erase the effect of the instrumented variable in the regressions above. The statistical significance on the coefficient of interest is smaller than in previous regressions, but remains significant at the 10% level. The other three regressions do not have coefficients that reach conventional levels of significance. Overall, this variable does not appear to be statistically significant except in the labor force participation regressions.

4.6.4 Distance to Nearest Large City

Our final robustness check is presented in Appendix Table 4. In these regressions, we include the distance to the nearest large non-reservation city. Our rationale for including this control variable is that for reservations near large urban areas, it might be possible for individuals to live on the reservation and earn their income off the reservation. Therefore, we include this variable as a right hand side control variable in our basic instrumental variables regressions. This additional variable only appears to be statistically significant in the percent labor force participation and unemployment regressions. The inclusion of this variable affects the statistical significance of our main coefficient of interest - indirect elected chief executive - however, the coefficients remains statistically significant at the 10% level for the first two regressions. The other regressions have the expected sign except for the coefficient in the unemployment regression; none reach statistical significance at conventional levels.

5 Endogenous Institutional Change

5.1 Imposition of Political Institutions and Amending the Constitutions

The findings so far suggest substantial endogeneity in constitutional design, given the striking differences between OLS and IV results. This raises the question about endogenous changes in the constitutional design, and what might have driven these changes. This section discusses the historical background regarding the possibility to change the constitution for American Indian tribal nations.

Political institutions of American Indian tribes were heavily influenced from the outset by the above described external influences that often led to the imposition of details in the constitution that were not aligned with the interests and needs of the single tribes. By the second half of the 20th century, tribes were afforded more autonomy over their own governance. This increase in American Indian autonomy is a direct result of broader social and political changes in the US, specifically the Civil Rights movement by African-Americans and the War on Poverty and Great Society, a new era began even for American Indians (?Wilkins, 2006). As a result of the reduced paternalistic attitude of the US Federal government towards American Indian internal governance issues, the American Indian tribes were able to make changes to their constitutions on their own terms and at their own behest with little or no BIA oversight or interference by the second half of the 20th century. This provided the tribes with the possibility to reform their constitutions if they deemed the constitutional details in place inappropriate or misaligned with the interests of the tribe. As a result of this increased autonomy, one would therefore expect tribes to change their constitutional design if it was beneficial to do so.

In fact, there were many reasons for tribes to reform their institutions. From the 1950s and 1960s on, there was an increase in the opportunities for American Indian tribes to operate federally funded programs on the reservations, but this necessitated more efficient and effective governments (?Deloria and Lytle, 1983). As the importance of these programs grew, it became apparent that a separation of powers and specifically independence of the chief executive was increasingly important. While the initial parliamentary system may have resembled many of the tribal efforts at consensus building and communal decision-making in practice given the weak court and executive branches it often resulted in glaring instances of corruption and incompetence. As a result elections often served as sanctioning devices and entire councils were often voted out of office after a single term creating significant government instability (?Champagne, 2006). This provides a rationale for a move towards more accountability and constraints imposed upon government officials. One method of doing this is to increase the accountability of the chief executive by making his election direct and make the chief executive responsible to the entire electorate instead of a majority of the elected council.

Given the greater autonomy of tribes and the changing needs for particular forms of institutions, this would suggest that we should observe changes to these constitutions over time. In particular tribes with an initial imposition of inappropriate constitutional features would find it most beneficial to udnertake constitutional change. However, any change in institutions crucially depends on whether the estimated benefits from such actions exceed the costs, and whether the change is politically feasible in the sense of attracting a sufficiently large consensus in the electorate. The potential benefits as described above would include the ability to manage and implement existing US Federal government programs and services as well as the ability to undertake additional economic development activities and partnerships. As tribal nations have been increasingly called into conflict and competition with federal, state and local governments there has been more of a need for a, "centralize(d) authority to manage and respond vigorously to political issues." (?Champagne, 2006; p. 16). On the other hand, there are potentially very large costs associated with political change.

Different sources of real and theoretical costs may serve as large impediments to the constitutional change process and may actually lock certain tribes in a sort of institutional poverty trap. In order to undertake constitutional change, a tribe needs the financial resources necessary to hire attorneys and to schedule meetings with community members to discuss proposed changes. If a particular tribe is already relatively poor, it is difficult to see how they would be able to undertake these changes without some outside funding. A second cost is the entrenchment of existing politicians. These individuals may pursue their own individual agendas which may be at odds with the greater good. In particular, if influential stake holders are not interested constitutional change or even obstruct any reforms, then it is unlikely that major reforms of the constitutional design materialize. Also, tribes are much more heterogenous in the modern context with significant intermixing between American Indians and other tribes as well as non-Indians(?Champagne, 2006). This makes agreements more difficult to attain (?Alesina and Rodrik, 1994; ?Persson and Tabellini, 1994). As many have noted there may be a general distaste for tribal politics (especially for the most egregiously corrupt tribal governments) so that individual citizens may be uninterested in anything having to do with voting or tribal governments (?Lemont, 2006; ?Wilkins, 2006). Against this background of potential costs and impediments to constitutional change, one would expect that the changes to constitutions would only be undertaken by the tribes that view it as sufficiently beneficial over the status quo as well as having the necessary resources to accomplish the process. Given that the imposition of the political institutions may have had negative consequences for the political and economic success of tribes, there may be certain tribes that have experienced negative outcomes due to the kind of institution initially adopted. For these tribes, constitutional changes should be expected to occur less frequently.

A very simple explanation for the lack of changes from presidential systems to parliamentary systems would take constitutional change as a public good provided by the government. As mentioned previously, it is both politically and financially costly to undertake the constitutional amendment process. The process can only be financed credibly by the government itself. Under presidential systems, public goods are under provided compared to parliamentary systems as well as the socially optimal amount. The basic rationale, provided in Persson and Tabellini (2002), is that presidential systems are able to provide public goods to a smaller set of the electorate than a parliamentary system. The necessity of attaining a winning coalition in parliamentary systems ensures that there is a larger amount of legislators in the ruling group of politicians as compared to a presidential system. Consequently, more public goods are provided to voters as a result. In the context of American Indian tribes that were assigned presidential systems at the time of constitutional adoption, the government would have low incentives to offer up constitutional amendments. In fact, we find that the incidence of actual constitutional changes are lower for presidential systems – about 75% of American Indian tribes with presidential systems never amend their constitutions (for any reason) while only 46% of tribes with parliamentary systems never amend their constitutions.

In summary, while one might expect tribes to change their (initially imposed) constitutions, this

would be especially true for tribes for which the initial assignment of political institutions resulted in outcomes that were or became less than optimal. Whenever the constitutions and their complementarity with economic development changed over time, e.g., due to the new opportunities from federally funded programs, a change of the constitution might have been beneficial. At the same time, constitutions would only be changed if the costs and obstacles were not unsurmountable. Presumably, parliamentary systems most closely resembled existing tribal authority and governance systems, so that this institution may have imposed the least cost on tribes in terms of government legitimacy and effectiveness. With an increased desire and need for a more accountable government and chief executive (?Wilkins, 2006), one would expect particular tribes to change from indirectly to directly elected executives (or from parliamentary to presidential type systems). Even though the parliamentary system appears to have led to better outcomes in the results presented above, there might also be political economy reasons for reform, for instance in order to curb expenditures, taxes, and redistribution (?Persson and Tabellini, 2004, ?Coate and Knight, 2011). At the same time, only those tribes will be able to undertake constitutional reform that can and want afford the costs that this change incurs. Tribes that are caught in poverty traps will not be able to gather the political or financial resources to undertake constitutional change even if their overall position could be improved as a result. Similarly, changes in constitutional design, e.g., from presidential to parliamentary systems, might face strong opposition from influential stake holders that try to maintain their direct influence on executives, or that try to curb expenditures and redistribution. Given the potential for financial as well as political constraints on making constitutional changes from directly-elected chief executives to indirectly-elected chief executives, it is not surprising that we find all of the actual changes moving in a single direction in the data.

5.2 Discussion and Conceptual Framework

Recall that the main identification problem of our paper concerns the causal effect of institutions (constitutional design, form of government) for economic development. Consider the following conceptual framework: purged for observable controls (X), we investigate the model

$$Y_{i,1990} = \beta I_{it} + \varepsilon_{it}, \quad t = 0, 1 \tag{5}$$

where $t = 0$ corresponds to the time of adoption of the first constitution, and $t = 1$ corresponds to (pre-)1990. Estimating this model by OLS delivers an estimate

$$\hat{\beta}_{t,OLS} = \beta + \frac{Cov(I_t, \varepsilon_t)}{Var(I_t)}, \quad t = 0, 1 \tag{6}$$

For $t = 0$, the estimates correspond to specification (3), and for $t = 1$ they correspond to specification (4). These estimates are biased and inconsistent if there is unobserved heterogeneity in ε that is systematically correlated with institutions I (measured at $t = 0$ or $t = 1$, respectively). In our specification, $I \in \{0, 1\}$, where 1 is a parliamentary system and 0 is the default or presidential system. Therefore, if there is some unobservable heterogeneity across tribes (for example systematically different preferences for particular institutions, differences in political culture, economic interests) this will cause an endogeneity bias. There will be elements in ε, which is correlated with outcomes Y by construction, that are also correlated with institutions I.

A viable and valid IV strategy using an instrument Z would allow for identifying the effect of institutions by eliminating this systematic endogeneity. Hence, as long as $Cov(Z, \varepsilon_t) = 0$ and $Cov(I_t, Z) \neq 0$, this would deliver an estimate

$$\hat{\beta}_{t,IV} = \beta + \frac{Cov(Z, \varepsilon_t)}{Cov(I_t, Z)} = \beta, \quad t = 0, 1 \tag{7}$$

To illustrate what this implies for the estimates and their interpretation in the concrete context, consider the following scenario: Suppose that for some reason there is an efficiency-equity trade-off involved in the choice of institutions (e.g., because presidential systems exhibit lower expenditures and redistribution than parliamentary systems, see **?**Persson and Tabellini, 2004, **?**Coate and Knight, 2011), and suppose that $I = 1$ is better for economic development than $I = 0$ (so that $\beta > 0$). Also suppose that there are two types of tribes, efficiency oriented and equity oriented tribes. Then, there would be some tribes that have a preference for $I = 0$ due to political economy reasons (e.g., because $I = 0$ implies less redistribution, even though it might deliver lower efficiency). Finally, suppose that at $t = 0$ some tribes get their preferred choice, while some others are assigned randomly an institution. This would correspond to the situation in which the federal administration assigns constitutions to tribes that fit their preferences, or that are not in line with what the tribes would have chosen by themselves, respectively.

Now consider the case in which institutions are perfectly persistent, i.e., constitutional design cannot be changed after the assignment. Under the above scenario, this would imply $Cov(I, \varepsilon_t) < 0$, so that OLS leads to a systematic underestimation of β. In contrast, IV would deliver an unbiased estimate, regardless of whether I_0 or I_1 are considered, as long as there is an instrument Z that effectively reflects a random assignment of the institutional setting, such that $Cov(Z, \varepsilon_t) = 0$ and $Var(I_t, Z) \neq 0$. The first condition should be satisfied regardless of whether considering I_0 or I_1, while with persistent institutions it holds in addition that $|Var(I_0, Z)| = |Var(I_1, Z)|$.

Next, consider the case in which constitutions can change between $t = 0$ and $t = 1$. Suppose that we observe I_0 and I_1, as in the empirical application above. There, the data in fact reveal that $I_0 \neq I_1$ in some tribes, so that it is likely that this reflects endogenous changes in institutions. With some tribes getting their preferred institutional choice at $t = 0$ and some others being randomly assigned an institution that is not consistent with their preferences, these latter tribes are likely to switch between $t = 0$ and $t = 1$. Notice that in this case it would still hold that $Cov(I, \varepsilon_t) < 0$, so that OLS delivers a systematic underestimate of β, while IV still delivers an unbiased estimate, regardless of whether we consider I_0 or I_1 as long as $Cov(Z, \varepsilon_t) = 0$ and $Var(I_t, Z) \neq 0$. However, some tribes that were assigned $I = 1$ might decide to switch to $I = 0$ if their preference for an institutional change is sufficiently pronounced to cover potential costs from this switch, i.e., if a majority prefers to reduce redistribution over a (potentially rather marginal) gain in efficiency. On the reverse, some tribes might wish to switch from $I = 0$ to $I = 1$. Such switching immediately implies that $|Var(I_0, Z)| > |Var(I_1, Z)|$, which is consistent with the results in column (1) of Tables 5 and 6. Note that those tribes are most likely to change their assigned institutions that have been relatively most constrained by the random assignment (i.e., tribes that had a relatively strong preference for $I = 1$ and instead got assigned a $I_0 = 1$, and vice versa).

These arguments would suggest systematic changes in institutions in both directions, from directly to indirectly elected executives, and from indirectly to directly elected executives. However, it might be that switching in one direction might involve different benefits and/or costs than in the other direction. For instance, it might be more beneficial to move from $I = 1$ to $I = 0$ due to efficiency reasons, e.g., because of the need to improve governance for participating in federally funded programs. Or it might be easier to change from $I = 1$ to $I = 0$ than from $I = 0$ to $I = 1$ for political economy reasons. For example, there might be powerful lobbies that object a switch from $I = 0$ to $I = 1$ (presumably because their influence would be lower under $I = 0$), but that appreciate a switch from $I = 1$ to $I = 0$. In addition, changing the constitution might be expensive. Taken together, this would imply that tribes that initially got an assignment of $I = 0$ might face a double hurdle to switch compared to those that got assigned $I = 1$. As a consequence, one would observe changes in constitutions from $I = 1$ to $I = 0$, even though this looks like a switch that reduces efficiency.

This example is fully consistent with the findings presented above and suggests that changing the constitutional design is likely to exhibit asymmetric costs. In fact, we document changes in a single

direction in our data from parliamentary to presidential systems. For the presidential system, we find no changes into the parliamentary system. In a simple regression, we find that the outcomes for the American Indian tribes that switched into a presidential system are statistically significantly greater than those that were initially assigned the presidential system. These results are shown in Table 8 and are consistent with the idea that the American Indian tribes making a change to their constitutions are doing so in a rational and economically beneficial manner. Those tribes that do not undertake changes to their constitutions either have the appropriate institution or are somehow constrained not to change.

5.3 Changes in Constitutions and Determinants of Change

The data reveal that institutions in terms of the constitutional design of tribes were not fully persistent. While 57% of the tribes in our data had an indirectly elected executive at the time of adoption of their first constitution, this perecent had fallen to 30% by 1990. Table 9 summarizes the information about changes in constitutions.

In Table 10 we regress whether the propensity of a tribe changing its constitution depends on the 1900 tribal characteristics. The dependent variable is an indicator variable of a change that uses information on the political institutions described in the first tribal constitutions, and the political institutions in place in 1990. All of the tribal characteristics are determined prior to the change in the political institutions.

The first set of explanatory variables are the same ones which were included in the previous analysis. These variables, which are the mean values of tribal characteristics in 1900, indicate how differences in these characteristics affect whether a tribe will change its constitution in the future. The results indicate that American Indian nations with above average labor force participation and literacy in 1900 were less likely to undertake a change to their constitution in the future.

The next set of variables provide the standard deviations of the characteristics of the American Indian nations in 1900. We have used the standard deviation as a measure of the level of inequality within a reservation. Our intention was to examine how inequality, along a number of dimensions, either increased or decreased the likelihood of a tribe undertaking constitutional reform. The results suggest that higher levels of inequality in labor force participation and literacy in 1900 will increase the likelihood of changing a tribal constitution in the future. These variables indicate that for tribes that start out with large variation in their economic and educational opportunities there will be a high likelihood of changing their political institutions in the future. We find that high levels of occupation-income index variation tends to reduce the likelihood of undertaking a successful constitutional amendment. This may be due to the fact that there are large entrenched political and economic elites which make it impossible to undertake change.

Taken together, the findings are consistent with the considerations in the previous section. In particular, tribes that are comparatively wealthy before the first constitutions were implemented are more likely (and able) to change their constitutions, indicating that for these tribes it was easier to cover the costs associated with changing institutions. In the next section, we discuss the implications of changes in constitutions for the previous results on development outcomes.

6   Concluding Remarks

This research has used a novel panel data set of political institutions of American Indian tribal nations over the 20th century. We examine the effect existing political institutions on economic development for individual American Indian tribal nations. The American Indian context is particularly useful for

focusing on political institutions in several respects: the larger legal, political and economic environment is held constant as they are located within the United States. In our analysis, we find that contemporaneous political institutions have no effect on economic performance in an ordinary least squares regression framework. When using an instrumentation strategy for political institutions that exploits the type of federal administration during the adoption of the initial constitutions, we find significant positve effects of parliamentary systems on economic performance. These results are robust to the inclusion of other potential constitutional amendments such as the addition of an independent judiciary or staggering the tribal council election terms.

At the same time, we document a significant amount of asymmetrical changes to constitutions over time. Contrary to our findings above, the political institutions are all changed from parliamentary systems and towards presidential systems. While this initially appeared contradictory, the observed changes can be explained by existing political economy obstacles inherent in the different forms of political institutions. Amending a constitution is costly in terms of financial capital and political capital for any government. Under a presidential system, there is little incentive for the incumbent to push for changes to the political institutions even if there are net benefits to be realized to making a change from an incompatible or incorrect political institution. Existing theoretical and empirical evidence suggests presidential systems have a less than optimal provision of public goods. In this context, where a constitutional amendment process is clearly an example of a public good, we would fully expect that presidential systems would be less likely to initiate and complete a constitutional amendment process.

Overall, our results provide useful evidence about the effect of political institutions and accountability on levels of economic development while holding constant a number of other important determinants of economic security and legal structure. While our analysis focuses on a very specific set of governments, our findings may have wider application. Specifically, in the modern nation-building efforts, our results may indicate that parliamentary systems may in fact be the best default system to emply in a nascent democracy where there is considerable uncertainty and heterogeneity of agents. We have found that when this institution is assigned there are two equally beneficial outcomes. On the one hand, there are some governments for which a parliamentary system is the appropriate institution and the initial assignment is a good one. For those with an inappropriate assignment of institution, we have found that the parliamentary system provides more incentives for undergo a constitutional amendment process. Presidential systems, on the other hand, tend to concentrate power and make for more rigid political institutions in our analysis. The strong presidential system created in a newly democratic Afghanistan, with the assistance of the United States under a Republican administration, may not allow for political change in the future if circumstances should change.

Table 1: Descriptive Statistics

	Panel A: 1990 US Census Data			
	Mean	Std. Dev.	Min.	Max.
Per Capita Income	5157.857	1322.482	2834.000	8372.000
Log of Per Capita Income	8.516	0.257	7.949	9.033
Percent in Labor Force	0.568	0.062	0.361	0.675
Percent of Homes with no Plumbing	0.045	0.075	0.000	0.467
Unemployment Rate	0.227	0.085	0.036	0.440
Percent with High School Degree or higher	0.633	0.083	0.373	0.853

	Panel B: 1900 US Census Data			
	Mean	Std. Dev.	Min.	Max.
Average Age on Reservation in 1900	26.036	4.043	15.333	37.400
Percent Male on Reservation in 1900	0.495	0.055	0.286	0.658
Percent Married on Reservation in 1900	0.390	0.079	0.161	0.569
Percent in Labor Force on Reservation in 1900	0.208	0.094	0	0.365
Average Occupational-Income Score in 1900	5.644	2.865	0	13.785
Total Whiteblood in 1900	0.093	0.105	0	0.420
Percent Literate on the Reservation in 1900	0.166	0.114	0	0.474
Census District 1 (Mich., Wisc., Minn.)	0.086	0.282	0	1
Census District 2 (N.Dak., S.Dak., Nebr., Iowa)	0.243	0.432	0	1
Census District 3 (Oklahoma)	0.200	0.403	0	1
Census District 4 (Ariz., N.Mex., Utah, Col., Nev., Mont., Wy.)	0.357	0.483	0	1
Census District 5 (Cal., Or., Wash.)	0.114	0.320	0	1

Table 2: Comparison of Tribal Nations Characteristics Adopted under Republican and Democratic Administrations

	Constitution Adopted Under						
	Democrat Presidential Admin.			Republican Presidential Admin.			
	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Mean Difference
Av. Age on Reservation in 1900	53	26.147	4.230	17	25.689	3.490	0.403
% Male on Reservation in 1900	53	0.490	0.058	17	0.510	0.043	-1.274
% Married on Reservation in 1900	53	0.389	0.086	17	0.393	0.056	-0.172
% in Labor Force on Reservation in 1900	53	0.208	0.098	17	0.208	0.084	0.001
Av. Occ.-Inc. Score in 1900	53	5.551	2.938	17	5.931	2.691	-0.473
Total Whiteblood in 1900	53	0.080	0.095	17	0.133	0.125	-1.867
% Literate on Reservation in 1900	53	0.155	0.107	17	0.200	0.134	-1.450

Table 3: Current Institutions and Development in 1990: OLS Results

Dependent Variable	Log Income per cap.	% in Labor Force	% of HH with no Plumbing	Unemployment	% with at least High School Degree
Indirect Elect Executive 1990	0.081	-0.010	0.001	-0.017	0.014
	(0.074)	(0.026)	(0.026)	(0.018)	(0.033)
Average Age on Res. 1900	-0.003	0.003	-0.006*	0.005	0.003
	(0.010)	(0.003)	(0.003)	(0.003)	(0.002)
% Male on Res. 1900	1.092*	0.104	-0.043	-0.422***	0.135
	(0.633)	(0.147)	(0.130)	(0.122)	(0.129)
% Married on Res. 1900	-0.930***	-0.139*	0.102	0.062	-0.359**
	(0.299)	(0.080)	(0.070)	(0.098)	(0.168)
% in Labor Force on Res. 1900	1.349*	-0.124	0.056	-0.232	0.020
	(0.677)	(0.140)	(0.202)	(0.175)	(0.164)
Av. % non-Indian on Res. 1900	0.143	-0.066	-0.318*	0.447	0.086
(Mixed Race)	(0.387)	(0.133)	(0.178)	(0.301)	(0.131)
Av. Occ.-Inc. Score 1900	-0.030	0.003	0.002	0.005	-0.004
	(0.021)	(0.005)	(0.007)	(0.005)	(0.005)
% Literate on Res. 1900	-0.425	-0.047	-0.133	0.294	0.160
	(0.507)	(0.135)	(0.142)	(0.243)	(0.165)
% Literate on Res. 1900	1.344	0.318	0.876	-2.113*	-0.109
× Av. % non-Indian on Res.	(1.879)	(0.569)	(0.752)	(1.092)	(0.675)
Census District 1	-0.331***	0.006	-0.018	0.030	-0.043
	(0.049)	(0.027)	(0.023)	(0.024)	(0.033)
Census District 2	-0.401***	-0.064***	0.020	0.053**	-0.070**
	(0.063)	(0.021)	(0.018)	(0.025)	(0.029)
Census District 3	-0.022	-0.005	-0.044*	-0.028	0.024
	(0.079)	(0.018)	(0.023)	(0.025)	(0.027)
Census District 4	-0.274***	-0.034*	0.022	0.072**	-0.022
	(0.059)	(0.019)	(0.018)	(0.028)	(0.030)
Constant	8.620***	0.521***	0.187**	0.211**	0.640***
	(0.367)	(0.120)	(0.084)	(0.084)	(0.087)
Observations	70	70	70	70	70
R-squared	0.539	0.207	0.247	0.452	0.300

Results from OLS regressions, standard errors clustered at the regional level in parentheses. ***, **,* indicate significance at 1-, 5-, and 10-percent level, respectively.

Table 4: Initial Institutions and Development in 1990: OLS Results

Dependent Variable	Log Income per cap.	% in Labor Force	% of HH with no Plumbing	Unemployment	% with at least High School Degree
Indirect Elect Executive at Adoption	-0.023	0.005	-0.011	-0.002	-0.016
	(0.030)	(0.014)	(0.025)	(0.017)	(0.017)
Average Age on Res. 1900	-0.001	0.003	-0.006*	0.005	0.004
	(0.010)	(0.003)	(0.003)	(0.003)	(0.002)
% Male on Res. 1900	1.135**	0.097	-0.032	-0.424***	0.155
	(0.508)	(0.164)	(0.144)	(0.131)	(0.119)
% Married on Res. 1900	-0.862**	-0.146*	0.098	0.045	-0.353*
	(0.326)	(0.078)	(0.068)	(0.112)	(0.171)
% in Labor Force on Res. 1900	1.181	-0.099	0.036	-0.208	-0.028
	(0.766)	(0.131)	(0.206)	(0.171)	(0.181)
Av. % non-Indian on Res. 1900	0.237	-0.079	-0.307*	0.433	0.113
(Mixed Race)	(0.322)	(0.131)	(0.161)	(0.297)	(0.101)
Av. Occ.-Inc. Score 1900	-0.027	0.003	0.003	0.005	-0.003
	(0.023)	(0.005)	(0.007)	(0.005)	(0.005)
% Literate on Res. 1900	-0.235	-0.073	-0.118	0.263	0.207
	(0.416)	(0.136)	(0.110)	(0.232)	(0.121)
% Literate on Res. 1900	0.523	0.432	0.804	-1.983*	-0.320
× Av. % non-Indian on Res.	(1.432)	(0.546)	(0.586)	(1.021)	(0.432)
Census District 1	-0.371***	0.012	-0.025	0.034	-0.056
	(0.054)	(0.029)	(0.032)	(0.028)	(0.034)
Census District 2	-0.452***	-0.057***	0.019	0.063**	-0.080***
	(0.060)	(0.018)	(0.012)	(0.026)	(0.021)
Census District 3	-0.078	0.003	-0.051	-0.021	0.006
	(0.080)	(0.020)	(0.033)	(0.027)	(0.029)
Census District 4	-0.305***	-0.030*	0.020	0.077**	-0.029
	(0.062)	(0.015)	(0.015)	(0.030)	(0.029)
Constant	8.490***	0.539***	0.174**	0.230**	0.604***
	(0.265)	(0.118)	(0.081)	(0.083)	(0.065)
Observations	70	70	70	70	70
R-squared	0.527	0.205	0.250	0.447	0.303

Results from OLS regressions, standard errors clustered at the regional level in parentheses. ***, **,* indicate significance at 1-, 5-, and 10-percent level, respectively.

Table 5: Current Institutions and Development in 1990: IV Results

Dependent Variable	Indirect Elect Exec. 1990	Log Income per cap.	% in Labor Force	% of HH with no Plumbing	Unemployment	% with at least High School Degree
Democrat Federal Administration when	0.214***					
Initial Constitution Adopted	(0.057)					
Predicted Indirect Elect Executive 1990		0.556***	0.131**	-0.149*	0.025	0.143
		(0.197)	(0.066)	(0.078)	(0.080)	(0.110)
Average Age on Res. 1900	-0.023*	-0.011	0.001	-0.003	0.004	0.001
	(0.012)	(0.009)	(0.004)	(0.003)	(0.003)	(0.003)
% Male on Res. 1900	-0.332	0.982	0.071	-0.008	-0.432***	0.105
	(1.104)	(1.036)	(0.265)	(0.222)	(0.138)	(0.229)
% Married on Res. 1900	-1.063*	-1.390***	-0.276**	0.247**	0.021	-0.484**
	(0.556)	(0.258)	(0.111)	(0.118)	(0.117)	(0.199)
% in Labor Force on Res. 1900	1.980**	2.118***	0.105	-0.188	-0.164	0.230
	(0.918)	(0.629)	(0.170)	(0.213)	(0.163)	(0.258)
Av. % non-Indian on Res. 1900	-1.201*	-0.293	-0.196	-0.179	0.408	-0.032
(Mixed Race)	(0.653)	(0.587)	(0.168)	(0.233)	(0.288)	(0.208)
Av. Occ.-Inc. Score 1900	-0.038	-0.043*	-0.001	0.006	0.004	-0.007
	(0.032)	(0.023)	(0.006)	(0.006)	(0.005)	(0.007)
% Literate on Res. 1900	-2.104***	-1.387*	-0.333*	0.171	0.209	-0.101
	(0.649)	(0.800)	(0.188)	(0.248)	(0.256)	(0.344)
% Literate on Res. 1900	8.863***	5.392*	1.522*	-0.406	-1.755	0.991
× Av. % non-Indian on Res.	(2.915)	(3.224)	(0.792)	(1.296)	(1.231)	(1.410)
Census District 1	0.257	-0.173	0.053	-0.069	0.044	0.000
	(0.213)	(0.117)	(0.036)	(0.042)	(0.037)	(0.051)
Census District 2	0.548***	-0.108	0.023	-0.073	0.079*	0.009
	(0.135)	(0.149)	(0.040)	(0.054)	(0.048)	(0.068)
Census District 3	0.390**	0.216*	0.066*	-0.119**	-0.007	0.088
	(0.156)	(0.130)	(0.037)	(0.048)	(0.042)	(0.055)
Census District 4	0.254	-0.115	0.014	-0.028	0.086**	0.021
	(0.175)	(0.116)	(0.031)	(0.044)	(0.037)	(0.046)
Constant	1.591***	9.241***	0.705***	-0.009	0.266*	0.808***
	(0.597)	(0.661)	(0.200)	(0.144)	(0.146)	(0.241)
Observations	70	70	70	70	70	70

Results from 2SLS regressions, standard errors clustered at the regional level in parentheses. Results in Column (1) are first stage estimates. ***, **,* indicate significance at 1-, 5-, and 10-percent level, respectively.

Table 6: Initial Institutions and Development in 1990: IV Results

Dependent Variable	Indirect Elect Exec. at Adoption	Log Income per cap.	% in Labor Force	% of HH with no Plumbing	Unemployment	% with at least High School Degree
Democrat Federal Administration when	0.316***					
Initial Constitution Adopted	(0.087)					
Predicted Indirect Elect Executive 1990		0.377**	0.089*	-0.101	0.017	0.097
		(0.179)	(0.049)	(0.064)	(0.052)	(0.077)
Average Age on Res. 1900	-0.026*	-0.008	0.002	-0.004	0.004	0.002
	(0.013)	(0.013)	(0.003)	(0.003)	(0.003)	(0.003)
% Male on Res. 1900	-1.187	0.718	0.009	0.063	-0.444***	0.037
	(1.699)	(1.086)	(0.263)	(0.211)	(0.139)	(0.226)
% Married on Res. 1900	0.314	-0.681	-0.108*	0.057	0.053	-0.302**
	(0.651)	(0.473)	(0.062)	(0.068)	(0.096)	(0.137)
% in Labor Force on Res. 1900	2.173*	1.837***	0.039	-0.112	-0.176	0.157
	(1.088)	(0.585)	(0.109)	(0.158)	(0.153)	(0.202)
Av. % non-Indian on Res. 1900	-1.291	-0.113	-0.153	-0.228	0.416	0.014
(Mixed Race)	(0.830)	(0.479)	(0.139)	(0.206)	(0.273)	(0.151)
Av. Occ.-Inc. Score 1900	-0.071*	-0.048**	-0.002	0.008	0.004	-0.009
	(0.035)	(0.019)	(0.005)	(0.005)	(0.005)	(0.006)
% Literate on Res. 1900	-1.312**	-0.713	-0.173	-0.010	0.240	0.072
	(0.624)	(0.544)	(0.120)	(0.158)	(0.214)	(0.200)
% Literate on Res. 1900	6.378***	2.873	0.926**	0.271	-1.870*	0.344
× Av. % non-Indian on Res.	(2.189)	(1.813)	(0.470)	(0.834)	(1.020)	(0.730)
Census District 1	0.454	-0.144	0.060*	-0.076*	0.045	0.008
	(0.268)	(0.138)	(0.032)	(0.045)	(0.038)	(0.056)
Census District 2	-0.037	-0.427***	-0.052***	0.013	0.065***	-0.072***
	(0.154)	(0.083)	(0.016)	(0.016)	(0.022)	(0.025)
Census District 3	0.502**	0.189	0.059*	-0.112**	-0.008	0.081
	(0.185)	(0.174)	(0.031)	(0.052)	(0.035)	(0.062)
Census District 4	0.050	-0.238***	-0.015	0.005	0.081***	-0.010
	(0.198)	(0.092)	(0.016)	(0.029)	(0.029)	(0.032)
Constant	1.508*	8.926***	0.631***	0.076	0.251**	0.727***
	(0.835)	(0.606)	(0.180)	(0.127)	(0.101)	(0.154)
Observations	70	70	70	70	70	70

Results from 2SLS regressions, standard errors clustered at the regional level in parentheses. Results in Column (1) are first stage estimates. ***, **,* indicate significance at 1-, 5-, and 10-percent level, respectively.

Table 7: Instrumental Variables Regression of the Change in the Labor Force Participation between 1900 and 1990, 2000 and 2005-2009 for American Indian Tribes

VARIABLES	Instrumental Variables Regression and Intention to Treat				Instrumental Variables Regression and Intention to Treat with Current Political Institution				Ordinary Least Squares Regressions		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Indirect Executive at Initial Adoption	Change of Percent in Labor Force, 1900-1990	Change of Percent in Labor Force, 1900-2000	Change of Percent in Labor Force, 1900-2005_2009	Indirect Executive in 1990	Change of Percent in Labor Force, 1900-1990	Change of Percent in Labor Force, 1900-2000	Change of Percent in Labor Force, 1900-2005_2009	Change of Percent in Labor Force, 1900-1990	Change of Percent in Labor Force, 1900-2000	Change of Percent in Labor Force, 1900-2005_2009
Democratic Administration when Initial Constitution Adopted	0.316*** (0.087)				0.214*** (0.065)						
Predicted [Indirect Elect Executive]		0.089* (0.049)	0.095*** (0.026)	0.153*** (0.051)							
Indirect Elect Executive in 1990						0.131** (0.066)	0.140*** (0.048)	0.225*** (0.073)	-0.010 (0.026)	0.017 (0.021)	0.010 (0.019)
Average Age on Reservation in 1900	0.026* (0.013)	0.002 (0.003)	0.002 (0.002)	-0.003 (0.003)	0.023 (0.014)	0.001 (0.004)	0.001 (0.003)	-0.004 (0.003)	0.003 (0.003)	0.004 (0.003)	-0.001 (0.003)
Percent Male on Reservation in 1900	1.187 (1.699)	0.009 (0.263)	0.227 (0.279)	-0.446 (0.303)	0.332 (1.255)	0.071 (0.265)	0.293 (0.290)	-0.340 (0.293)	0.104 (0.147)	0.322 (0.195)	-0.289*** (0.083)
Percent Married on Reservation in 1900	-0.314 (0.651)	-0.108* (0.062)	-0.010 (0.131)	-0.021 (0.126)	1.063 (0.632)	-0.276** (0.111)	-0.189** (0.084)	-0.308*** (0.112)	-0.139* (0.080)	-0.069 (0.107)	-0.099 (0.087)
Percent in Labor Force on Reservation in 1900	-2.173* (1.088)	-0.961*** (0.109)	-1.223*** (0.188)	-0.722*** (0.176)	-1.980* (1.043)	-0.895*** (0.170)	-1.152*** (0.216)	-0.608** (0.241)	-1.124*** (0.140)	-1.352*** (0.192)	-0.957*** (0.217)
Average Percent non-Indian on Reservation in 1900 Mixed Race	1.291 (0.830)	-0.153 (0.139)	-0.036 (0.184)	-0.219 (0.198)	1.201 (0.742)	-0.196 (0.168)	-0.082 (0.152)	-0.293 (0.209)	-0.066 (0.133)	0.031 (0.180)	-0.095 (0.146)
Average Occupational-Income Score in 1900	0.071* (0.035)	-0.002 (0.005)	0.005 (0.006)	-0.009 (0.007)	0.038 (0.036)	-0.001 (0.006)	0.006 (0.007)	-0.007 (0.009)	0.003 (0.005)	0.010 (0.006)	-0.002 (0.008)
Percent Literate on Reservation in 1	1.312** (0.624)	-0.173 (0.120)	-0.068 (0.128)	0.012 (0.146)	2.104*** (0.737)	-0.333* (0.188)	-0.238 (0.151)	-0.261 (0.271)	-0.047 (0.135)	0.012 (0.136)	0.175* (0.100)
Percent Literate on Reservation in 1900 x Average Percent non-Indian on Reservation in 1900 Mixed Race	-6.378*** (2.189)	0.926** (0.470)	1.022* (0.586)	1.052 (0.773)	-8.863** (3.311)	1.522* (0.792)	1.658** (0.653)	2.073 (1.394)	0.318 (0.569)	0.607 (0.703)	0.237 (0.727)
Census District 1	-0.454 (0.268)	0.060* (0.032)	0.072** (0.031)	0.146** (0.062)	-0.257 (0.242)	0.053 (0.036)	0.065* (0.034)	0.135** (0.066)	0.006 (0.027)	0.023 (0.025)	0.063* (0.032)
Census District 2	0.037 (0.154)	-0.052*** (0.016)	-0.053*** (0.018)	-0.002 (0.042)	-0.548*** (0.154)	0.023 (0.040)	0.027 (0.035)	0.127* (0.071)	-0.064*** (0.021)	-0.049** (0.022)	-0.006 (0.031)
Census District 3	-0.502** (0.185)	0.059* (0.031)	0.025 (0.029)	0.079 (0.063)	-0.390** (0.177)	0.066* (0.037)	0.032 (0.034)	0.091 (0.060)	-0.005 (0.018)	-0.030 (0.021)	-0.018 (0.029)
Census District 4	-0.050 (0.198)	-0.015 (0.016)	-0.057* (0.032)	0.010 (0.046)	-0.254 (0.199)	0.014 (0.031)	-0.026 (0.037)	0.059 (0.061)	-0.034* (0.019)	-0.067** (0.027)	-0.013 (0.032)
Constant	-0.823 (0.828)	0.542*** (0.144)	0.396** (0.157)	0.782*** (0.101)	-0.805 (0.697)	0.574*** (0.160)	0.431*** (0.166)	0.837*** (0.132)	0.531*** (0.111)	0.393*** (0.129)	0.771*** (0.065)
Observations	70	70	70	70	70	70	70	70	70	70	70
R-squared	0.403	0.663	0.696	0.497	0.431	0.551	0.654	0.353	0.757	0.795	0.770

Robust standard errors in parentheses, clustered at the region level.
*** p<0.01, ** p<0.05, * p<0.1

Table 8 : Ordinary Least Squares Regression of Economic Outcomes on Initial Assignment of Direct Election for American Indian Tribes that have a Directly Elected Chief Executive in 1990.

	(1)	(2)	(3)	(4)	(5)
	Log Per Capita Income 1990	Percent in Labor Force of Adults in 1990	Percent of Households with No Plumbing Facilities in 1990	Unemployment 1990	Percent with HS Degree or more of Adults in 1990
VARIABLES					
Initially Assigned Indirect Elect at Time of Constitutional Adoption	0.099**	0.023**	-0.036	0.014	0.019
	(0.048)	(0.011)	(0.022)	(0.016)	(0.030)
Average Age on Reservation in 1900	-0.008	0.003	-0.008**	0.007	0.003
	(0.016)	(0.004)	(0.004)	(0.004)	(0.004)
Percent Male on Reservation in 1900	1.373**	0.163	-0.036	-0.489***	0.248**
	(0.618)	(0.167)	(0.138)	(0.099)	(0.124)
Percent Married on Reservation in 1900	-0.786***	-0.118**	0.113	0.030	-0.364***
	(0.229)	(0.056)	(0.071)	(0.058)	(0.116)
Percent in Labor Force on Reservation in 1900	1.414*	-0.092	0.111	-0.248	-0.009
	(0.832)	(0.148)	(0.265)	(0.151)	(0.255)
Average Percent non-Indian on Reservation in 1900 Mixed Race	-0.151	-0.079	-0.305**	0.547*	-0.065
	(0.440)	(0.132)	(0.146)	(0.299)	(0.088)
Average Occupational-Income Score in 1900	-0.031	0.002	0.001	0.004	-0.004
	(0.023)	(0.006)	(0.008)	(0.004)	(0.007)
Percent Literate on Reservation in 190	-0.435	-0.108	-0.002	0.307	-0.019
	(0.635)	(0.163)	(0.094)	(0.303)	(0.199)
Percent Literate on Reservation in 1900 x Average Percent non-Indian on	2.431	0.606	0.503	-2.580*	0.857
	(2.342)	(0.675)	(0.544)	(1.370)	(0.739)
Census District 1	-0.326***	0.081***	-0.010	-0.033*	-0.133***
	(0.066)	(0.014)	(0.020)	(0.017)	(0.018)
Census District 2	-0.445***	0.003	0.021	0.029	-0.155***
	(0.084)	(0.025)	(0.015)	(0.027)	(0.016)
Census District 3	-0.082	0.061**	-0.063*	-0.027	-0.062**
	(0.136)	(0.028)	(0.034)	(0.032)	(0.028)
Census District 4	-0.310***	0.041***	0.025	0.050*	-0.100***
	(0.060)	(0.015)	(0.023)	(0.030)	(0.024)
Constant	8.429***	0.428***	0.240*	0.247***	0.677***
	(0.320)	(0.107)	(0.132)	(0.084)	(0.109)
Observations	49	49	49	49	49
R-squared	0.608	0.303	0.284	0.561	0.403

Robust standard errors in parentheses, clustered at the region level.
*** p<0.01, ** p<0.05, * p<0.1

	Mean	Std. Dev.	Min	Max
Table 9 : Descriptive Statistics				
Year of Adoption of Modern constitution	1943	18.4	1901	1994
Democratic Administration when Initial constitution adopted	0.76	0.43	0	1
Indirectly Elected Chief Executive at Adoption of Constitution	0.57	0.50	0	1
Indirectly Elected Chief Executive at Adoption of Constitution in 199	0.30	0.46	0	1

Table 10: Predicting Changes to Constitution

VARIABLES	(1) Change to Direct Elect
Average Age on Reservation in 1900	0.004
	(0.019)
Percent Male on Reservation in 1900	1.001
	(1.131)
Percent Married on Reservation in 1900	0.902
	(2.045)
Percent in Labor Force on Reservation in 1900	-4.655**
	(1.931)
Average Percent non-Indian on Reservation in 1900 Mixed Race	-0.470
	(0.819)
Average Occupational-Income Score in 1900	0.178***
	(0.062)
	-2.612*
Percent Literate on Reservation in 1900	(1.426)
Standard Deviation of Average Percent non-Indian on Reservation in 1900 Mixed Race	-1.342
	(0.923)
Standard Deviation of Percent in Labor Force on Reservation in 1900	2.874*
	(1.587)
	2.267*
Standard Deviation of Percent Literate on Reservation in 1900	(1.111)
	-5.336
Standard Deviation of Percent Married on Reservation in 1900	(4.501)
Standard Deviation of Average Occupational-Income Score in 1900	-0.161**
	(0.060)
Percent Literate on Reservation in 1900 x Average Percent non-Indian on Reservation in 1900 Mixed Race	8.653
	(5.546)
Census District 1	-0.301*
	(0.151)
Census District 2	0.529***
	(0.111)
Census District 3	-0.187
	(0.196)
Census District 4	0.219
	(0.153)
Constant	1.424
	(1.997)
Observations	70
R-squared	0.554

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 1: Placebo Instrumental Variables Regression of Using 1900 Tribal Economic C

VARIABLES	(1) Percent Married on Reservation in 1900	(2) Percent in Labor Force on Reservation in 1900	(3) Average Percent non-Indian on Reservation in 1900 Mixed Race	(4) Average Occupational-Income Score in 1900	(5) Percent Literate on Reservation in 1900
Predicted [Indirect Elect Executive at Adoption]	-0.036	0.042	-0.057	-1.347	-0.026
	(0.053)	(0.026)	(0.057)	(0.900)	(0.071)
Predicted [Indirect Elect Executive in 1990]					
Average Age on Reservation in 1900	0.006	0.004**	-0.001	-0.122***	0.005
	(0.005)	(0.001)	(0.002)	(0.039)	(0.003)
Percent Male on Reservation in 1900	0.285	-0.019	0.223	3.360	-0.156
	(0.233)	(0.108)	(0.218)	(2.502)	(0.325)
Percent Married on Reservation in 1900		0.167*	0.013	-4.687	0.038
		(0.095)	(0.068)	(2.950)	(0.145)
Percent in Labor Force on Reservation in 1900	0.419***		-0.257***	27.796***	0.158
	(0.127)		(0.078)	(1.006)	(0.247)
Average Percent non-Indian on Reservation in 1900 Mixed Race	0.104	-0.132		3.293*	0.391**
	(0.120)	(0.083)		(1.772)	(0.172)
Average Occupational-Income Score in 1900	-0.012***	0.030***	0.007**		-0.003
	(0.005)	(0.001)	(0.003)		(0.009)
Percent Literate on Reservation in 1900	0.133	-0.077	-0.252***	2.712	
	(0.145)	(0.073)	(0.056)	(2.335)	
Percent Literate on Reservation in 1900 x Average Percent non-Indian on Reservation in 1900 Mixed Race	-0.747	0.811**	3.530***	-24.347**	
	(0.508)	(0.372)	(0.678)	(10.603)	
Census District 1	-0.061	0.004	-0.043	-0.204	-0.026
	(0.045)	(0.024)	(0.044)	(0.722)	(0.069)
Census District 2	-0.032	-0.000	-0.017	-0.288	0.047
	(0.026)	(0.017)	(0.016)	(0.554)	(0.034)
Census District 3	-0.036	0.019	-0.113*	-0.879	0.089
	(0.063)	(0.027)	(0.062)	(0.768)	(0.076)
Census District 4	-0.029	0.009	-0.073***	-0.578	-0.062
	(0.043)	(0.019)	(0.023)	(0.515)	(0.047)
Constant	0.100	-0.133***	0.081	4.214**	0.069
	(0.143)	(0.050)	(0.090)	(2.096)	(0.117)
Observations	70	70	70	70	70
R-squared	0.341	0.819	0.750	0.815	0.476

Robust standard errors in parentheses, clustered at the region level.
*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 2 : Inclusion of Additional Political Institutions

VARIABLES	(1) Log Per Capita Income 1990	(2) Log Per Capita Income 1990	(3) Log Per Capita Income 1990	(4) Log Per Capita Income 1990	(5) Log Per Capita Income 1990	(6) Log Per Capita Income 1990	(7) Log Per Capita Income 1990
Predicted [Indirect Elect Executive]	0.611* (0.341)	0.399* (0.222)	0.409* (0.242)	0.387* (0.209)	0.405* (0.225)	0.383** (0.181)	0.900* (0.518)
Judiciary Exists?	0.359* (0.214)						0.489 (0.347)
Staggered Election Terms?		-0.002 (0.052)					-0.098 (0.070)
Term Length?			-0.001 (0.001)				-0.007* (0.004)
Council Directly Elected?				0.149** (0.069)			0.312** (0.141)
Tribal Council Size					0.001 (0.001)		0.005* (0.003)
Operates a Casino?						-0.042 (0.092)	-0.039 (0.165)
Constant	8.680*** (0.494)	8.535*** (0.527)	8.531*** (0.531)	8.520*** (0.490)	8.531*** (0.534)	8.592*** (0.556)	8.623*** (0.685)
Observations	70	68	68	68	68	70	68
R-squared	-0.322	0.0129	-0.00702	0.112	0.000581	0.122	-1.166

Robust standard errors in parentheses; Note: all regressions include the standard control variables from previous analysis, but are not shown in the table above
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Appendix Table 3: Instrumental Variables Regressions for 1990 Outcomes using Years Since Constitutional Adoption Variable

VARIABLES	(1) Indirect Executive at Initial Adoption	(2) Log Per Capita Income 1990	(3) Percent in Labor Force of Adults in 1990	(4) Percent of Households with No Plumbing Facilities in 1990	(5) Unemployment 1990	(6) Percent with HS Degree or more of Adults in 1990
Democratic Administration when Initial Constitution Adopted	0.302*** (0.096)					
Predicted [Indirect Elect Executive]		0.393* (0.207)	0.099* (0.057)	-0.109 (0.072)	0.016 (0.054)	0.106 (0.081)
Years Since Constitutional Adoption	0.008*** (0.003)	-0.003 (0.003)	-0.002** (0.001)	0.001 (0.001)	0.000 (0.001)	-0.002 (0.001)
Average Age on Reservation in 1900	0.032** (0.014)	-0.011 (0.014)	-0.000 (0.003)	-0.003 (0.003)	0.004 (0.003)	0.000 (0.003)
Percent Male on Reservation in 1900	1.319 (1.423)	0.651 (1.069)	-0.034 (0.236)	0.095 (0.201)	-0.439*** (0.147)	0.001 (0.214)
Percent Married on Reservation in 1900	-0.168 (0.575)	-0.730 (0.447)	-0.139** (0.055)	0.080 (0.066)	0.057 (0.094)	-0.328** (0.153)
Percent in Labor Force on Reservation in 1900	-2.481** (1.097)	1.986*** (0.655)	0.133 (0.118)	-0.183 (0.182)	-0.187 (0.160)	0.237 (0.235)
Average Percent non-Indian on Reservation in 1900 Mixed Race	0.939 (0.742)	-0.004 (0.440)	-0.084 (0.146)	-0.279 (0.202)	0.409 (0.254)	0.072 (0.152)
Average Occupational-Income Score in 1900	0.084** (0.035)	-0.054** (0.022)	-0.006 (0.006)	0.010* (0.006)	0.004 (0.006)	-0.012 (0.008)
Percent Literate on Reservation in 190	1.346*** (0.465)	-0.746 (0.455)	-0.195** (0.082)	0.006 (0.162)	0.242 (0.209)	0.054 (0.162)
Percent Literate on Reservation in 1900 x Average Percent non-Indian on	-3.819* (2.104)	2.035 (1.329)	0.395 (0.570)	0.667 (0.753)	-1.812** (0.864)	-0.107 (0.482)
Census District 1	-0.401** (0.168)	-0.157 (0.122)	0.052** (0.025)	-0.070* (0.041)	0.046 (0.037)	0.001 (0.048)
Census District 2	0.013 (0.121)	-0.418*** (0.083)	-0.047*** (0.011)	0.009 (0.016)	0.064*** (0.023)	-0.068*** (0.025)
Census District 3	-0.392*** (0.148)	0.157 (0.142)	0.039* (0.020)	-0.097** (0.041)	-0.006 (0.031)	0.064 (0.051)
Census District 4	-0.053 (0.162)	-0.236** (0.092)	-0.014 (0.014)	0.004 (0.029)	0.080*** (0.029)	-0.009 (0.031)
Constant	-1.510* (0.868)	9.208*** (0.769)	0.810*** (0.213)	-0.058 (0.180)	0.232 (0.152)	0.879*** (0.208)
Observations	70	70	70	70	70	70
R-squared	0.455	0.124	0.00659	0.0394	0.441	0.0251

Robust standard errors in parentheses, clustered at the region level.
*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 4 : Instrumental Variables Regressions for 1990 Outcomes using Distance to Nearest City Variable

	(1)	(2)	(3)	(4)	(5)	(6)
	Indirect Executive at Initial Adoption	Log Per Capita Income 1990	Percent in Labor Force of Adults in 1990	Percent of Households with No Plumbing Facilities in 1990	Unemployment 1990	Percent with HS Degree or more of Adults in 1990
VARIABLES						
Democratic Administration when Initial Constitution Adopted	0.320***					
	(0.084)					
Predicted [Indirect Elect Executive]		0.359**	0.099*	-0.095	0.031	0.091
		(0.178)	(0.056)	(0.060)	(0.046)	(0.078)
Miles to Nearest City in 100s of Miles	0.020	-0.024	0.013*	0.008	0.018***	-0.008
	(0.063)	(0.027)	(0.007)	(0.007)	(0.006)	(0.011)
Average Age on Reservation in 1900	0.026**	-0.007	0.001	-0.004*	0.003	0.002
	(0.012)	(0.013)	(0.004)	(0.002)	(0.003)	(0.003)
Percent Male on Reservation in 1900	1.155	0.778	-0.023	0.043	-0.490***	0.058
	(1.520)	(1.065)	(0.268)	(0.207)	(0.148)	(0.226)
Percent Married on Reservation in 1900	-0.337	-0.659	-0.120*	0.049	0.036	-0.294**
	(0.568)	(0.462)	(0.067)	(0.068)	(0.092)	(0.132)
Percent in Labor Force on Reservation in 1900	-1.992**	1.582***	0.173	-0.028	0.020	0.069
	(0.870)	(0.589)	(0.147)	(0.152)	(0.142)	(0.177)
Average Percent non-Indian on Reservation in 1900 Mixed Race	1.241	-0.031	-0.196	-0.255	0.353	0.043
	(0.846)	(0.499)	(0.140)	(0.196)	(0.263)	(0.169)
Average Occupational-Income Score in 1900	0.067**	-0.042**	-0.005	0.006	-0.001	-0.007
	(0.030)	(0.018)	(0.006)	(0.004)	(0.005)	(0.006)
Percent Literate on Reservation in	1.314**	-0.691	-0.185	-0.017	0.223	0.080
	(0.543)	(0.536)	(0.119)	(0.152)	(0.220)	(0.199)
in 1900 x Average Percent non-Indian on Reservation in 1900	-6.291***	2.656	1.041**	0.343	-1.703*	0.268
	(2.010)	(1.761)	(0.460)	(0.791)	(0.992)	(0.745)
Census District 1	-0.447*	-0.161	0.068*	-0.071*	0.058	0.002
	(0.238)	(0.135)	(0.036)	(0.043)	(0.039)	(0.056)
Census District 2	0.032	-0.420***	-0.056***	0.011	0.059***	-0.070***
	(0.131)	(0.080)	(0.019)	(0.015)	(0.023)	(0.022)
Census District 3	-0.486***	0.161	0.074**	-0.103**	0.013	0.072
	(0.172)	(0.174)	(0.035)	(0.049)	(0.036)	(0.066)
Census District 4	-0.053	-0.235***	-0.017	0.004	0.078**	-0.009
	(0.172)	(0.086)	(0.019)	(0.028)	(0.031)	(0.030)
Constant	-0.829	8.900***	0.644***	0.084	0.271***	0.718***
	(0.732)	(0.603)	(0.185)	(0.122)	(0.102)	(0.153)
Observations	70	70	70	70	70	70

Robust standard errors in parentheses, clustered at the region level.
*** p<0.01, ** p<0.05, * p<0.1