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The long-term effects of American Indian boarding schools☆

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ABSTRACT

This paper explores some long-standing questions of the legacy of American Indian boarding schools by comparing contemporary Indian reservations that experienced differing impacts in the past from boarding schools. Combining recent reservation-level census data and school enrollment data from 1911 to 1932, I find that reservations that sent a larger share of students to off-reservation boarding schools have higher high school graduation rates, higher per capita income, lower poverty rates, a greater proportion of exclusively English speakers, and smaller family sizes. These results are supported when distance to the nearest off-reservation boarding school that subsequently closed is used as an instrument for the proportion of past boarding school students. I conclude with a discussion of the possible reasons for this link.

1. Introduction

Economists have become increasingly interested in studying how assimilation policies impact the integration of minorities.[1] Education is often used as the tool for assimilation and one of the most controversial examples of such policy was the practice of sending American Indian children to off-reservation boarding schools during the early twentieth century.[2] While this event has received much attention by sociologists, anthropologists, and historians, the effects of this historical episode have been largely overlooked by economists.[3]

The stated purpose of off-reservation boarding schools was to remove Indian children from their communities in order to train them to look and act like their white counterparts, but many of these students eventually returned to their home reservations.[4] In this paper, I explore the long-run effect of historical exposure to off-reservation boarding schools on contemporary social and economic outcomes of American Indians living

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[1] The initial work in this literature focused on the theoretical possibilities of cultural opposition to forced assimilation (Bisin and Verdier, 2000, 2001). More recently, empirical work has found casual evidence of the effect of cultural assimilation on the outcomes of affected individuals. For example, Fouka (2015) uses a difference-in-differences approach to show that German immigrants who were affected by a German language ban in U.S. schools after World War I were more likely to marry endogamously, less likely to volunteer in World War II, and less likely to adopt Americanized names for their children. Additionally, Meyersson (2014) implements a regression discontinuity design to show that females, especially from poor and religiously conservative families, increased their educational attainment in Turkish cities under Islamic political control in large part to loosening restrictions on religious expression in local schools.

[2] The removal of indigenous children from their families to boarding or residential schools also occurred in Canada and Australia. Unlike the United Stations, both Canada and Australia have formally apologized for their country's past policies of forcefully separating indigenous children from their parents.

[3] The key exception is the work by Feir (2016) on the impact of Canadian residential boarding school system. This work will be discussed in greater length later in this paper.

[4] Statistical evidence confirm that boarding school exposure did not differentially alter the link to a reservation's ancestral population. Table A1 in the online appendix shows that reservations with larger share of boarding school students from 1911 to 1932 saw a greater share of out-migration during the mid-1940s. However, by 1980, the share of enrolled tribal members living on the reservation was unaffected by the past boarding school experience. Tribal membership is assigned to a lineal descendant of someone listed on the tribe's base roll. Many of those base rolls were enumerated during the early twentieth century, which correspond to the historical era used in this paper to estimate the long-run effects of boarding schools.

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on reservations.[5] I first collect reservation-level data from 1911 to 1932 to measure the proportion of Indian students who attended off-reservation boarding schools. I also collect a wide range of tribal, historical, and contemporary variables to control for other factors that can influence modern reservation outcomes. I then link these historical variables to several outcomes that could be affected by past boarding school enrollment rates: (1) high school graduation rate, (2) per capita income; (3) poverty rate; (4) share of strictly English speakers; and (5) family size.

The lone econometric study of boarding schools is by Feir (2016), who explores the effect of attending a Canadian residential school on adult outcomes by exploiting variation in school proximity and the local share of non-aboriginal Catholics (interacted with national trends in residential school enrollment). Using detailed cross-sectional individual data, residential schooling is shown to increase the likelihood of graduating high school, to reduce reliance on government transfers, to increase the probability of being employed and of living off an Indian reserve, and to decrease the probability of speaking an Aboriginal language at home.

In many ways, my paper is a formal investigation into the robustness of these results, with the key difference that this paper estimates the effect of boarding schools over multiple generations. Yet, there are two noticeable differences between the Canadian and American residential systems. First, the decision to attend an Indian boarding school in America required parental consent by 1911, whereas the local Indian agent selected children from Canadian reserves. Second, most Canadian residential schools were run by the Catholic Church, whereas the American boarding schools were funded and run by the federal government (Miller, 1996; Adams, 1995). Thus, issues of selection and the religious content of the curriculum suggest possible differences in the long-run effects of the two systems could exist.

The key findings from my analysis are as follows. I find that reservations who were most affected by boarding schools are less poor, more educated and more linguistically assimilated today. For example, I find that an increase of one standard deviation in the proportion of past boarding school students increases the current high school graduation rate by 2.1 percentage points, increases per capita income by 7.3 percent, decreases the poverty rate by 3.6 percentage points, increases the share of individuals who exclusively speak English at home by 3.6 percentage points, and lowers family size by 2.0 percent. These findings are robust to a host of model specifications and the inclusion of historical and tribal controls.

I also draw inferences about the impact of boarding schools using proximity to a nearest boarding school that has since closed as an instrument for the proportion of boarding school students. While the historical literature suggests that the location of the schools was largely exogenous to the characteristics of nearby reservations, this assertion is confirmed by multiple falsification tests and placebo distances. The resulting IV estimates are consistent with the earlier results: the estimated long-run assimilation effects caused by past boarding school exposure are larger in absolute size than their OLS counterparts.

The remainder of the paper looks at the channels that can explain how these effects operate. Unfortunately, there is no known evidence of variation in educational inputs across boarding schools; therefore, I cannot isolate a particular boarding school characteristic that might explain these assimilation gains. I do, however, lump the potential channels of causality into two broad categories: factors internal to the individual and factors external to the individual. Internal factors include parental education, skills, norms and beliefs that can be passed down through generations, where external factors include economic and political institutions that may have been altered due to past boarding school exposure.

I find that reservations that were most affected by boarding schools had higher literacy rates by the mid-twentieth century. Those mid-century gains in literacy have persisted to the present and explain between 10 and 30 percent of the long-run assimilation effect. I also find that children living on reservations most affected by boarding schools are more likely to have a parent who graduated high school, less likely to have family members who speak in a Native language, yet there is no relationship between past boarding school exposure and school-based characteristics such as the likelihood to elders speak about tribal traditions at school. Finally, I show that controlling for contemporary variation in institutions, such as casino operations or self-governance projects, do not influence the long-run assimilation effect. Thus, the long-run assimilation effects are largely driven by factors internal to individuals.

My findings relate to at least three literature. The first concerns the effects of historical investments in assimilation on long-run development. For example, many studies have uncovered positive long-run effects of historical missionary activity throughout the world, including in Africa (Gallego and Woodberry, 2010; Nunn, 2014; Woodberry, 2004), Mexico (Waldinger, 2016), The Netherlands (Akçomak et al., 2016), India (Mantovanelli, 2013), and South America (Caicedo, 2014). This richness of my dataset will allow me to control for missionary activity while still estimating long-run assimilation effects caused by boarding schools. Second, these findings add to the growing appreciation by economists that historical events can influence development today through its impact on human capital and culture (for a survey of this literature, see Nunn, 2009). Third, these findings contribute to the literature on American Indian economic development, which has attributed economic growth to variations in land tenure (Anderson and Lueck, 1992; Akee, 2009), tribal sovereignty (Anderson and Parker, 2008), leadership (Cornell and Kalt, 1992b,a, 1995, 1998, 2000; 2006), and constitutional design (Akee et al., 2015). Within this growing literature, Dippel (2014) is the lone study to emphasize the role of history on current economic development by isolating the institutional origins of current political conflicts.

The paper is organized as follows. Section 2 provides background on the history of Indian boarding schools. Section 3 discusses the data, and section 4 explains the empirical strategy. Section 5 reports the results and section 6 sheds light on the channels through which this historical effect operates. Last, section 7 offers conclusions.

2. Background

While the U.S. policy toward Indian education has historically been driven by the desire to "civilize" Indians in Euro-American ways, the methods used by the U.S. government have significantly changed since 1790. In the period from 1790 to 1869, the management of Indian education was effectively placed in the hands of Christian missionaries (Henson et al., 2008, 200). Limited federal appropriations combined with Indian resistance to proselytism kept the number of formally educated Indians low during this era. In 1824, for example, enrollment in mission-run schools totaled 900 students, which corresponded to 0.2\% of the American Indian population (Hurt, 1987, 101; Thornton, 2000, 24).[6] Only a limited number of tribes, among them the Cherokees and Choctaws, managed their own schools, which they did thanks to ear-marked appropriations in treaties (Szasz, 1999, 9).

From 1869 to 1878, Indian education remained decentralized under President Ulysses S. Grant's "Peace Policy." Driven by the increased number of Indian-white conflicts and the geographical limits to removing

[5] For the sake of brevity, I will commonly refer to off-reservation boarding schools simply as boarding schools. Most Indian reservations contained boarding schools within their boundaries, but the attention in the historiography has been focused on the larger and distantly unique off-reservation boarding schools. Hence, the variable of interest discussed throughout this paper will refer to the proportion of Indian students on a reservation who attended off-reservation boarding schools.

[6] One explanation for the low number of schools on reservations was the proclivity of Indian leaders to reject educational clauses in treaties. For example, during the Treaty of Medicine Lodge negotiations in 1867, Kiowa chief *Satanta* rejected the idea of building schools on his reservation: "I don't want any of the medicine lodges within this country. I want the children raised as I was" (Fear-Segal, 2007, 49).