

Land Allotment and Native American Households During the Assimilation Era

Christian Dippel
UCLA, NBER

Dustin Frye
Vassar

July 2020

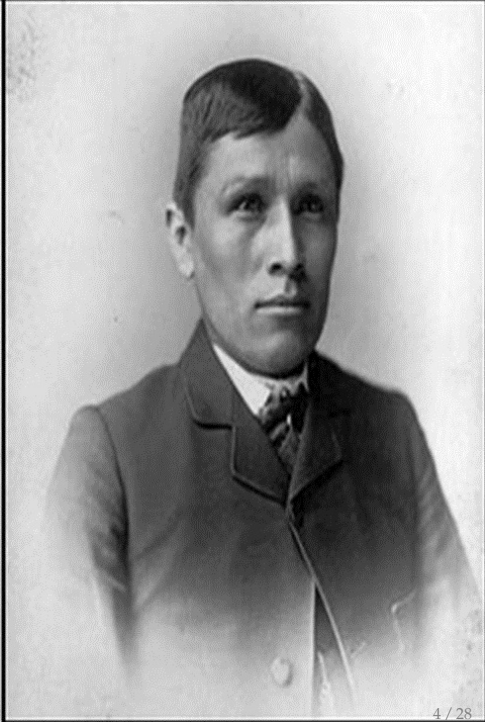
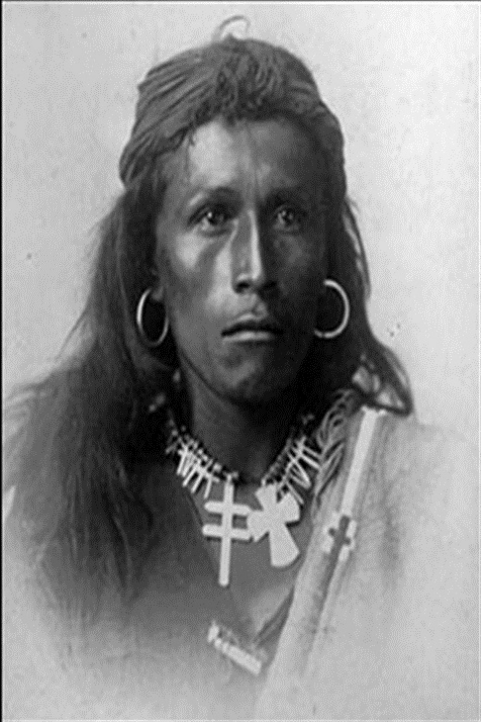
Allotment as Assimilation Policy I

- ▶ Land Allotment: the corner-stone of the 'Assimilation Era' (1887–1934)
- ▶ Allotted household heads received a 160 acre allotment held 'in trust': could work land but not sell
- ▶ Land title converted to full 'fee simple', once BIA agent declared allottee "competent"
- ▶ Allotment was a conditional transfer program aimed at cultural assimilation
 - ▶ the second/conditional arm was worth $20\times$ per capita income

Allotment as Assimilation Policy II

“Freed from the binds of tribal customs and authoritarian chiefs, the individual would soon want to accumulate wealth and property and [...] would acquire the habits and customs of Christian society. The key was to be private property” — Carlson (1981, p80)

“Each Indian who was to receive a [fee-]patent stepped from a tepee and shot an arrow to signify that he was leaving behind his Indian way of life. He placed his hands on a plow to show that he had chosen the farming life of a white man, with sweat and hard work. — McDonnell (1980, p26)



Result-Overview I

- 0) Have universe of 'Indian allotments', issuance-year, year of fee (if ever), and ▶ exact geo-location to map to reservation
- 1) Most direct assimilation(-signalling) measures available as reservation-year-aggregates from BIA reports
 - ▶ number of ▶ "church-going Indians" and those ▶ "wearing civilized dress"

Result-Overview II

- 2) Our focus: farming and schooling choices in Full Count Census (300,000 Native Americans per decade)
 - ▶ **Main challenge**: Census does not include reservation/tribe, and without it you can do very little
 - ▶ **Data-innovation 1**: built a stable personID-to-reservationID mapping we'll discuss
- 3) 1930 and 1940 **Pseudo-Panel DiD**: use sharp end of allotment with 1934 IRA
 - ▶ drop in ▶ assimilation-signalling from 1930–1940 on allotted reservations

Result-Overview III

- 4) In a **cohort-analysis**, we compare educational attainment of cohorts within reservation or household, depending on their incentive to signal assimilation
 - ▶ This identifies from the **sharp start** to allotment (within-rez), and the **sharp end** created by the 1934 IRA
 - ▶ Evidence that incentive for assimilation-signalling mattered **within-rez and within-HH**
- 5) **Data-innovation 2**: FCC has no household-level allotment-information;..
 - ▶ digitized the BIA's **Indian Census Rolls (ICR)**, which contain allotment-numbers we can match to the BLM data
 - ▶ for record-linkage `Census : ICR`, develop methodology for noisy individual but precise HH information
 - ▶ Allows us to sharpen our analysis by comparing households on first and second treatment arms on same reservation

Assign Tribe/Reservation

- ▶ Variable 'tribe' was only enumerated in 3 years (1900, 1910, and 1930), but 'tribe' is not digitized in Full Count.
- ▶ Assigning Reservation to 1930 and 1940 Full Count:
 - 1) Parse 1930 Census 'enumeration district' (ED) descriptions
 - ▶ Identify first 100 reservations from 513 EDs
 - 2a) Geolocate 1930 Census **STDMCD** (=city/town/PLSS) using mapping API
 - ▶ Query universe of 5,154 locations
 - 2b) Overlay **API locations** with reservation boundaries and assign to 1930 FCC
 - 3) Construct **1930-to-1940 ED-crosswalk** from Morse and Weintraub (2019) ▶ Match Results

Record Linkage using Household Structure

- ▶ Data: The BIA's [Indian Census Rolls](#) (ICR) form bridge to allotment data
- ▶ Challenge: Linking Native American records is difficult because of [name and DoB changing](#)

Household-ID & persons in ICR Roll					Household-ID & persons in 1940 Full Count				
HH-ID	YoB	last name	first name	relation-to-Head	HH-ID	YoB	last name	first name	relation-to-Head
35545638	1908	SESSPOOCH	WAUN	Head	79055	1907	CESSPOOCH	JUAN	Head
35545638	1901	SESSPOOCH	ELLEN	Wife	79055	1902	CESSPOOCH	ELLEN	Wife
35545638	1934	SESSPOOCH	LOUIS	Son	79055	1933	CESSPOOCH	LEWIS	Son
35545638	1937	SESSPOOCH	DEBOIA	Daughter	79055	1936	CESSPOOCH	DOVELIA	Daughter

- ▶ Solution: Expand [record-linkage algorithm](#) to up-weight [household structure](#) over individual data.

Linkage Algorithm

- 1) individual record linkage establishes for each 'master-individual' a set of potential 'using-individuals' (Bailey et al., 2017; Abramitzky et al., 2019)
- 2) adjust 'individual similarity score' for pairwise 'household-similarity'
- 3) use adjusted similarity scores for "best-off" grid-search
- 4) flag linkages that need manual checks based on household-criteria.
- 5) manually evaluate every flagged household-link and hard-code 'true-positive' and 'true-negative' links
 - ▶ 1,000 RA hours for 2,500 flagged HHs
- 6) Feed hard-coded pairs back in and re-run stages 2)–3)
 - ▶ Linkage Example
 - ▶ 23% match-rate ICR-to-1940 FCC

Summary

- ▶ Unique policy setting: a high-stakes conditional transfer program aimed at cultural assimilation
- ▶ Hypothesis: Did Native Americans respond to program's incentive structure by assimilation-signalling?
- ▶ Data innovation 1: Assign reservation/tribe to near-universe of Native Americans in Full-Count Census
 - ▶ general utility of enumeration-district Census-crosswalk?
- ▶ Data innovation 2: record-linkage with 'super-noisy' individual data but relatively precise household information
 - ▶ general utility for other settings with noisy individual but stable group information?

References and Notes

Abramitzky, Ran, Leah Platt Boustan, Katherine Eriksson, James J Feigenbaum, and Santiago Pérez, “Automated linking of historical data,” Technical Report, National Bureau of Economic Research 2019.

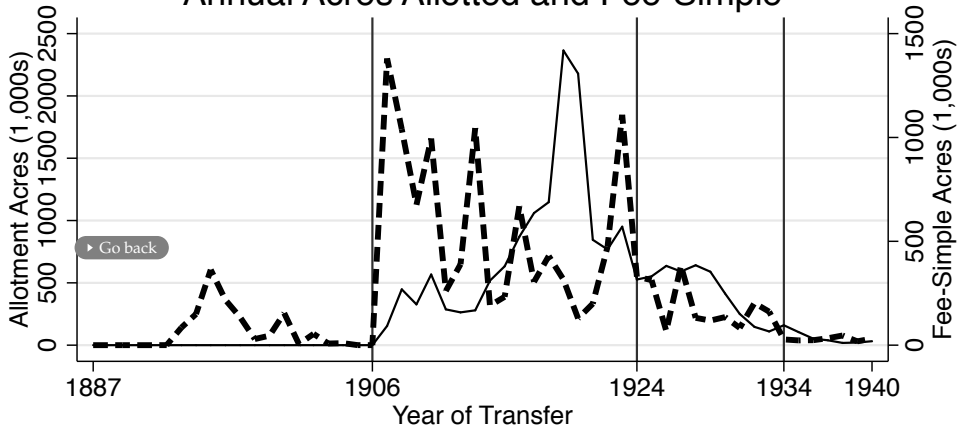
Bailey, Martha, Connor Cole, Morgan Henderson, and Catherine Massey, “How well do automated linking methods perform in historical samples? Evidence from new ground truth,” *Unpublished manuscript*, 2017.

Carlson, Leonard A, *Indians, bureaucrats, and land: the Dawes Act and the decline of Indian farming* number 36, Praeger Pub Text, 1981.

McDonnell, Janet, “Competency Commissions and Indian Land Policy, 1913-1920,” *South Dakota History*, 1980, 11 (1), 21–34.

Morse, Stephen P. and Joel D Weintraub, “The Unified Census Enumeration District Finder 1880–1940,”
<https://stevemorse.org/census/unified.html>
2019. Accessed: 2019-11-08.

Annual Acres Allotted and Fee-Simple



1887: Dawes Act; 1906: Burke Act; 1924: Citizenship; 1934: IRA
Dashed: Allotments; Solid: Fee-Simple

INDIAN LAND FOR SALE

GET A HOME

OF

[▶ Go back](#)

YOUR OWN



EASY PAYMENTS



PERFECT TITLE



POSSESSION

WITHIN

THIRTY DAYS

FINE LANDS IN THE WEST

IRRIGATED
IRRIGABLE

GRAZING

AGRICULTURAL
DRY FARMING

IN 1910 THE DEPARTMENT OF THE INTERIOR SOLD UNDER SEALED BIDS ALLOTTED INDIAN LAND AS FOLLOWS:

Average Price

Average Price

Progress of allotment work elsewhere has been slow, owing to the time required to make surveys preliminary to allotting, and the late date at which the appropriation bill passed.

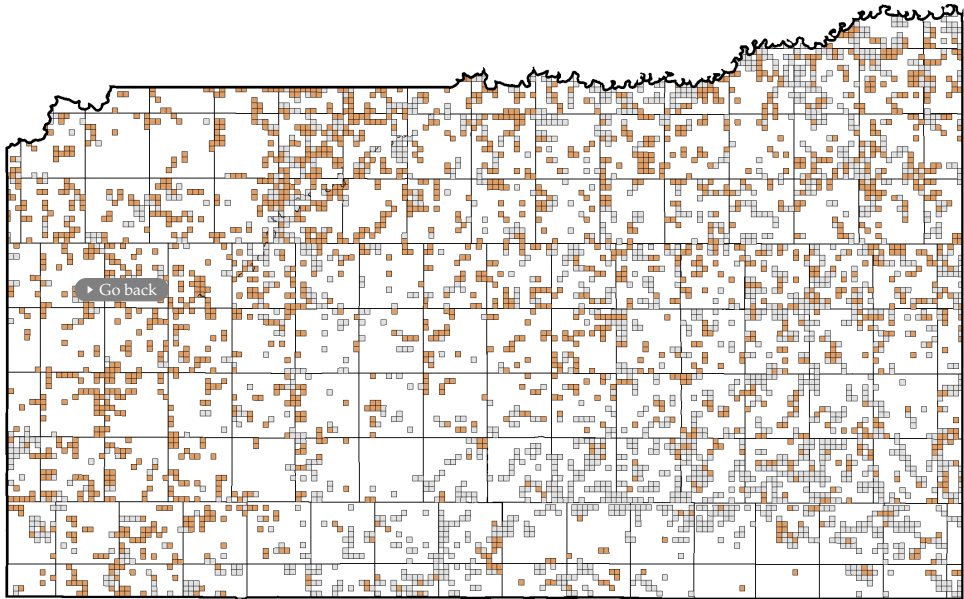
Considerable opposition to the allotment policy has been developed from two sources. Those who believe in the wisdom of tribal ownership, and in the policy of continuing the Indian in his aboriginal customs, habits, and independence, oppose it because it will eventually dissolve his tribal relations and cause his absorption into the body politic. On the other hand, those who expected that the severalty act would immediately open to public settlement long-coveted Indian lands, oppose it because they have learned that these expectations will not be realized.

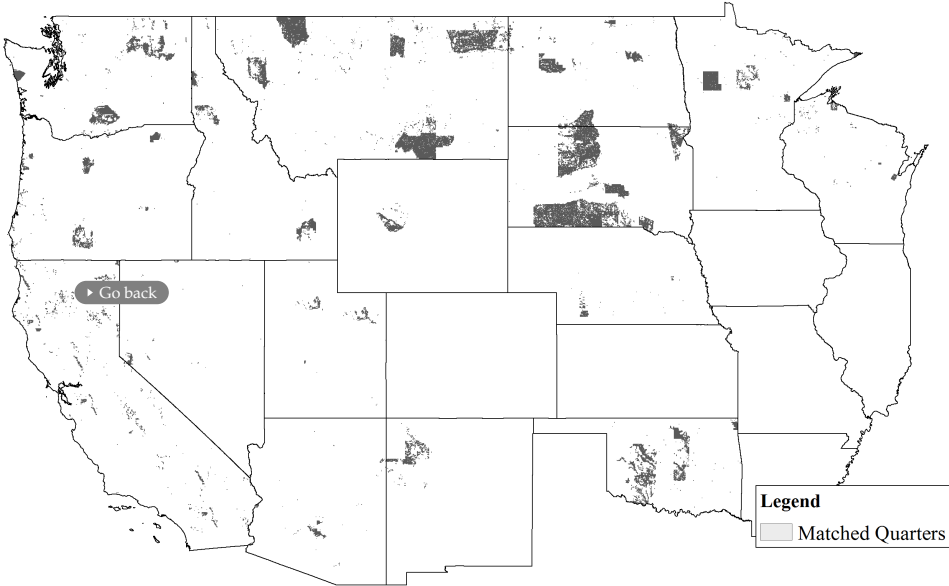
[Go back](#)

INDIAN AFFAIRS.

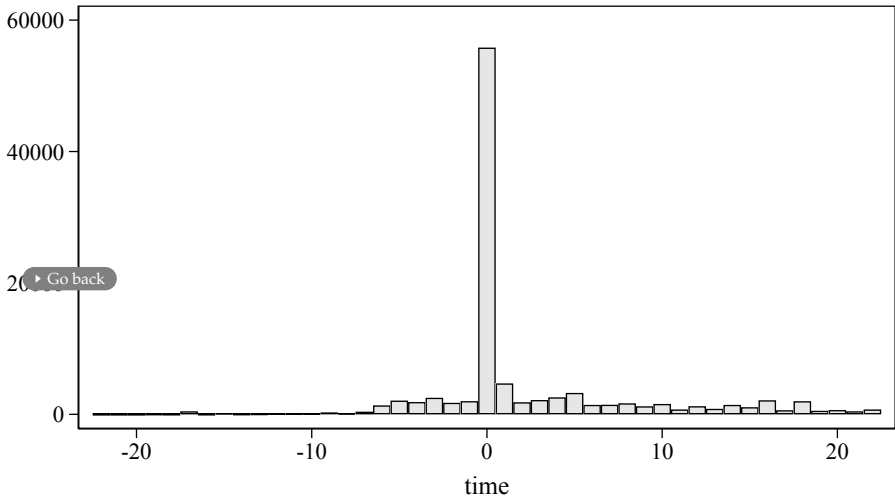
XXXIX

There is a third class of persons who are heartily in favor of allotting Indian lands, but who are apprehensive that, under the flexible terms of the allotment act, allotments may be forced upon Indians before they are ready to receive, use, and hold them. An allotment un-

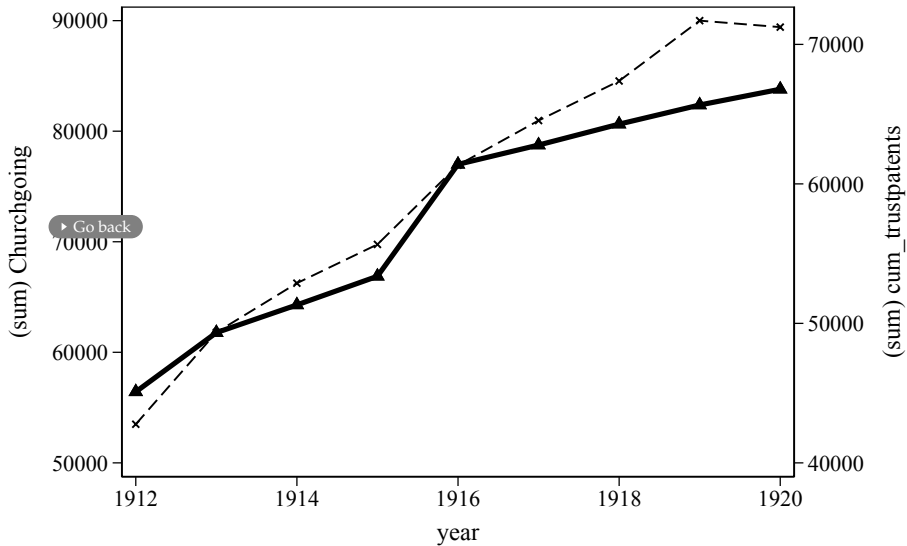




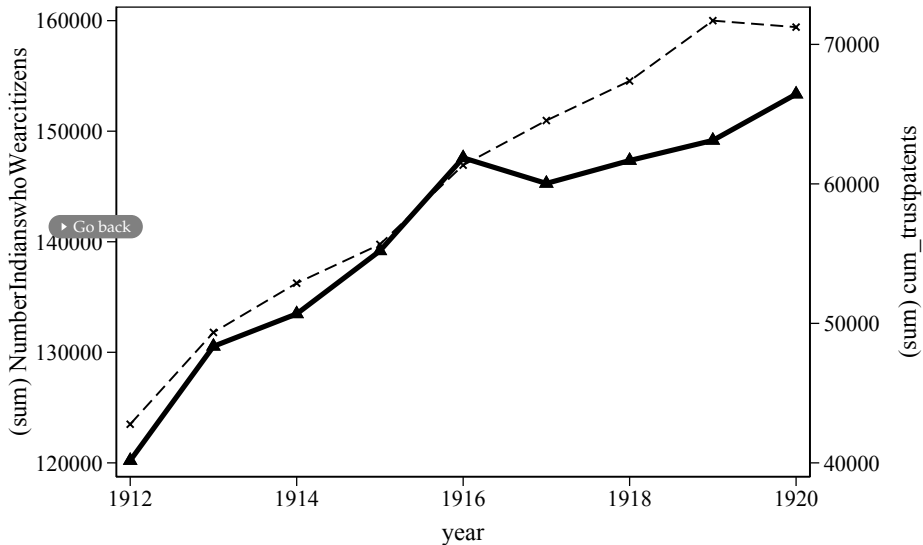
Patents Issued



Church-Going Indians & #Allotments (dashed)

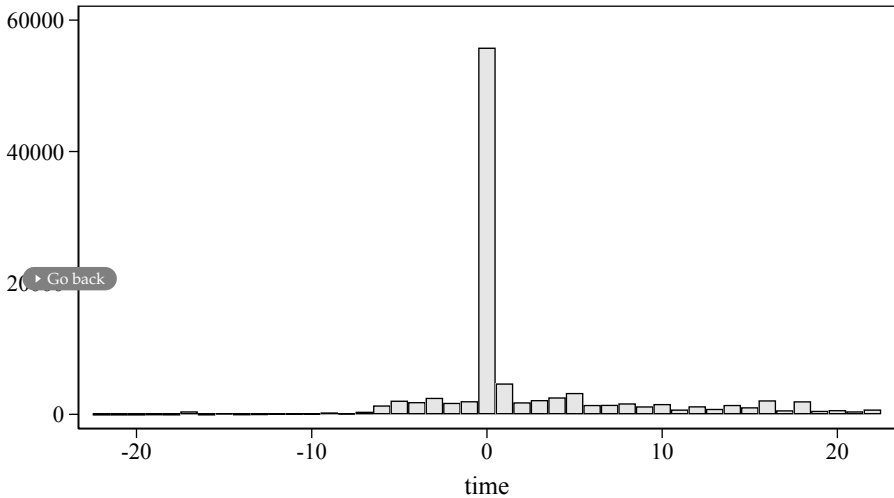


#Indians Who Wear Citizens' Dress & #Allotments (dashed)



	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Panel A, outcome:</i>	D (Industry = Agriculture)				D (Live on Farm & Industry ≠ Agriculture)			
D(Alloted)	0.096** [0.034]	0.109*** [0.006]	0.114*** [0.004]	0.106*** [0.006]	-0.011 [0.655]	-0.004 [0.859]	-0.015 [0.517]	-0.012 [0.618]
D(Alloted) × Year=1940	-0.088 [0.164]	-0.078 [0.206]	-0.079 [0.200]	-0.079 [0.198]	0.039 [0.364]	0.040 [0.345]	0.041 [0.336]	0.041 [0.331]
year=1940	-0.109*** [0.002]	-0.126*** [0.000]	-0.124*** [0.000]	-0.125*** [0.000]	0.101*** [0.000]	0.098*** [0.000]	0.097*** [0.000]	0.097*** [0.000]
N = # Households	128,053	127,000	127,000	127,000	128,053	127,000	127,000	127,000
R-squared	0.168	0.220	0.223	0.225	0.066	0.072	0.080	0.081
<i>Panel B, outcome:</i>	D (Go to School = Yes)							
D(Alloted)	-0.015 [0.429]	-0.009 [0.671]	-0.010 [0.587]	0.005 [0.723]	-0.015 [0.426]	-0.009 [0.666]	-0.010 [0.583]	0.005 [0.731]
D(Alloted) × Year=1940	-0.057*** [0.006]	-0.055*** [0.006]	-0.054*** [0.005]	-0.052*** [0.006]	-0.057*** [0.006]	-0.054*** [0.006]	-0.054*** [0.005]	-0.052*** [0.006]
year=1940	0.066*** [0.000]	0.066*** [0.000]	0.065*** [0.000]	0.064*** [0.000]				
year=1940 × [5<Age<10]					0.098*** [0.000]	0.098*** [0.000]	0.097*** [0.000]	0.096*** [0.000]
year=1940 × [9<Age<15]					0.041*** [0.007]	0.042*** [0.007]	0.041*** [0.008]	0.040*** [0.009]
year=1940 × [14<Age<20]					0.054*** [0.000]	0.054*** [0.000]	0.053*** [0.000]	0.053*** [0.000]
N = # Children	195,552	193,710	193,710	193,710	195,552	193,710	193,710	193,710
R-squared	0.236	0.239	0.240	0.241	0.236	0.239	0.240	0.241
Controls Demog.	✓	✓	✓	✓	✓	✓	✓	✓
Controls County		✓	✓	✓		✓	✓	✓
Controls LPA			✓	✓			✓	✓
Controls Historic				✓				

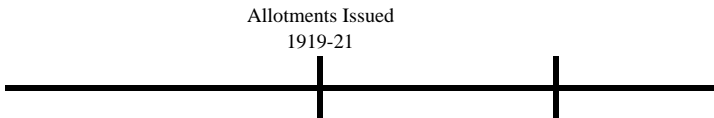
Patents Issued



Reservation 1



Reservation 2



► Go back

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Years of Education		D (Dropped Out of Primary School)		D (Attended Middle School)		D (No Schooling)	
<i>Panel A</i>								
# of Years Age 6--12 under Allotment	0.034* [0.079]	0.041** [0.045]	-0.008*** [0.002]	-0.009*** [0.001]	0.007*** [0.006]	0.008*** [0.005]	-0.001 [0.623]	-0.000 [0.865]
R-squared	0.538	0.735	0.179	0.400	0.452	0.638	0.519	0.679
<i>Panel B</i>								
# of Years Age 6--18 under Allotment	0.025 [0.133]	0.030 [0.101]	-0.005*** [0.010]	-0.006*** [0.004]	0.005** [0.031]	0.005** [0.033]	-0.001 [0.679]	-0.000 [0.812]
R-squared	0.538	0.735	0.178	0.399	0.452	0.637	0.519	0.679
<i>Panel C</i>								
D (Years Age 6--12 under Allotment > 0)	0.285 [0.109]	0.330* [0.083]	-0.092*** [0.001]	-0.100*** [0.000]	0.081*** [0.002]	0.089*** [0.003]	-0.011 [0.370]	-0.011 [0.401]
R-squared	0.537	0.735	0.181	0.401	0.453	0.638	0.519	0.679
<i>Panel D</i>								
D (Years Age 6--18 under Allotment > 0)	0.306 [0.186]	0.322 [0.212]	-0.099*** [0.000]	-0.107*** [0.000]	0.084** [0.013]	0.089** [0.020]	-0.015 [0.194]	-0.019 [0.170]
R-squared	0.538	0.735	0.181	0.402	0.453	0.638	0.519	0.679
Observations	245,264	236,668	238,549	230,002	238,549	230,002	238,549	230,002
# Fixed Effects	335	49,600	334	49,173	334	49,173	334	49,173
Controls Demog.	✓	✓	✓	✓	✓	✓	✓	✓
Fixed Effects	Rez	Household	Rez	Household	Rez	Household	Rez	Household

INDIAN CENSUS ROLL

Census of the Crow Creek reservation of the Crow Creek jurisdiction, as of April 1, 1954, taken by JAMES H. HYDE Acting Superintendent.

NUMBER	NAME		SEX	AGE AT BIRTH DAY	TRIBE	DEGREE OF BLOOD	MARRIAGE STATUS	RELATIONSHIP TO HEAD OF HOUSEHOLD	RESIDENCE				WARD	ALLOTMENT, ACREAGE, AND IDENTI- FICATION NUMBERS
	SURNAME	GIVEN							AT PRESENT WHERE ENROLLLED	AT ANOTHER JURISDICTION	Post office	County	State	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
38	Berry	Maude May	F	5-2-07 27	Sicou	1/4	S	Alone	40	No	Pierre	Hughes	S.D.	Yes An. 38 Al. 1162
39	Rear	Jennie K.	F	5/27/19 19	"	"	F	S	Alone	44	Yes			" An. 41 Al. 1554
40	Rear	Reith/K/	M	1881 53	"	"	F	S	Alone	45	"			" An. 42 Al. 585
41	R	Benjamin E.	M	5-11-09 24	"	"	F	Div	46	"				" An. 43 Al. 1370
42	Big Eagle	Henry	M	1881 52	"	"	F	M	48	"				" An. 44 Al. 1183
43	" (Fire-tail)	Julia	F	1898 59	"	"	F	M	50	"				" An. 47 Al. 997
44	"	Marie	F	1-23-25 11	"	"	F	S	51	"				" An. 48
45	"	Henry M.	M	6-1-25 9	"	"	F	S	52	"				" An. 49
46	"	Charlotte	F	7-5-28 8	"	"	F	S	53	"				" An. 50
47	"	Gerald Alvin	M	6-23-33 7/15	"	"	F	S	54	"				" ---
48	Big Eagle	John	M	7-9-03 51	"	"	S/4	M	56	"				" An. 53 Al. 1154

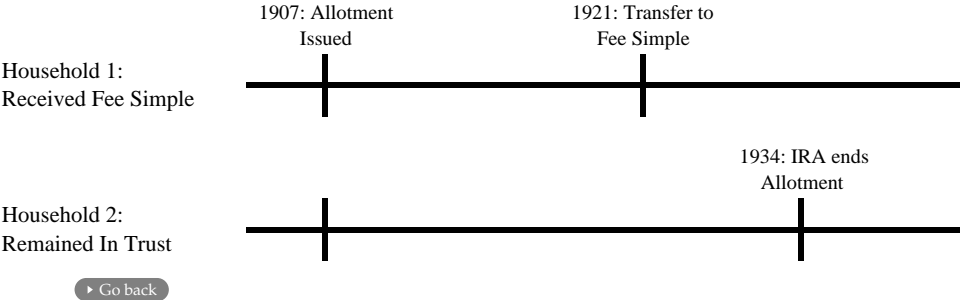


Table: Reservation Assignment by Source and Decade

Source	1930	1940
Enumeration District Descrip	85,563	97,046
PLSS Overlap	20,071	22,212
Township API Overlap	116,822	78,843
Adjacent Township API	72,083	53,295
Single County	16,092	12,141
Hand Link	16,356	13,112
Total Reservation Population	326,987	276,649
Off-Reservation Population	75,225	83,178
Total Population	402,212	359,827

B		C		D		E	F	G	H	I	J	K	L	M	N	O	P	Q	R
HH & person-id 1930 Full Count		HH & person-id ICR Roll (1936)		TRUE POSITIVE	TRUE NEGATIVE	Characteristics in 1930 Full Count						Characteristics in ICR Roll (1936)							
HH-ID	person-ID- 1930	HH-ID	person-ID- ICR	person-ID- 1930	person-ID- 1930	last name	first name	YoB	sex	status	relation- to-Head	last name	first name	YoB	sex	status	relation-to- Head		
1542-7520	15427520-1	36	426-623-3	15427520-3	15427520-1	CORCORAN	JAMES	1889	M	Married	Head	CORCORAN	JAMES R	1839	M	Never married	Son		
1542-7520	15427520-2	36	426-623-2	15427520-2		CORCORAN	ELISA	1907	F	Married	Spouse	CORCORAN	ELIZA	1908	F	Married	Wife		
1542-7520	15427520-3					CORCORAN	JAMES R	1930	M	Never married	Son								
		36	426-623-5									CORCORAN	PHILMONA	1861	F	Widowed	Mother-in-law		
		36	426-623-1	15427520-1								CORCORAN	JIM		M	Married	Head		
			26-623-6									CORCORAN	VIRGINIA	1935	F	Never married	Daughter		
		36	426-623-4									CORCORAN	ALICE	1931	F	Never married	Daughter		

► Go back