

# ONLINE APPENDIX FOR INDIGENOUS NATIONS AND THE DEVELOPMENT OF THE US ECONOMY\*

## *Land, Resources, and Dispossession*

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February 8, 2022

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\*The opinions and interpretations in this paper are those of the authors and do not necessarily reflect those of the Federal Reserve Bank of Minneapolis.

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# A Appendix

## A.1 Evidence of Economic Marginalization

Indigenous economic marginalization persists today. In Figure A.1 the vertical axis depicts real income per capita from the American Community Survey between 2014-2018 and the horizontal axis depicts real income per capita in 2006-2010. The circles' location indicates the per capita income of a given reservation and the relative sizes of the circles indicates population size. The dashed vertical and horizontal lines show real average per capita income for White Americans and Black Americans in 2006-2010 and 2014-2018 respectively. The figure illustrates that reservation communities, despite some outliers which vary over time, are some of the lowest per capita income communities in the US. The fact that the circles for reservations lie largely along the 45 degree line also suggests there has been little income growth between 2006-2010 and 2014-2018. For those outlier reservations, off the 45 degree line, it suggests higher income in 2014-2018 than in 2006-2010. Those that lie below the 45 degree line have seen declines in income between 2006-2010 and 2014-2018.

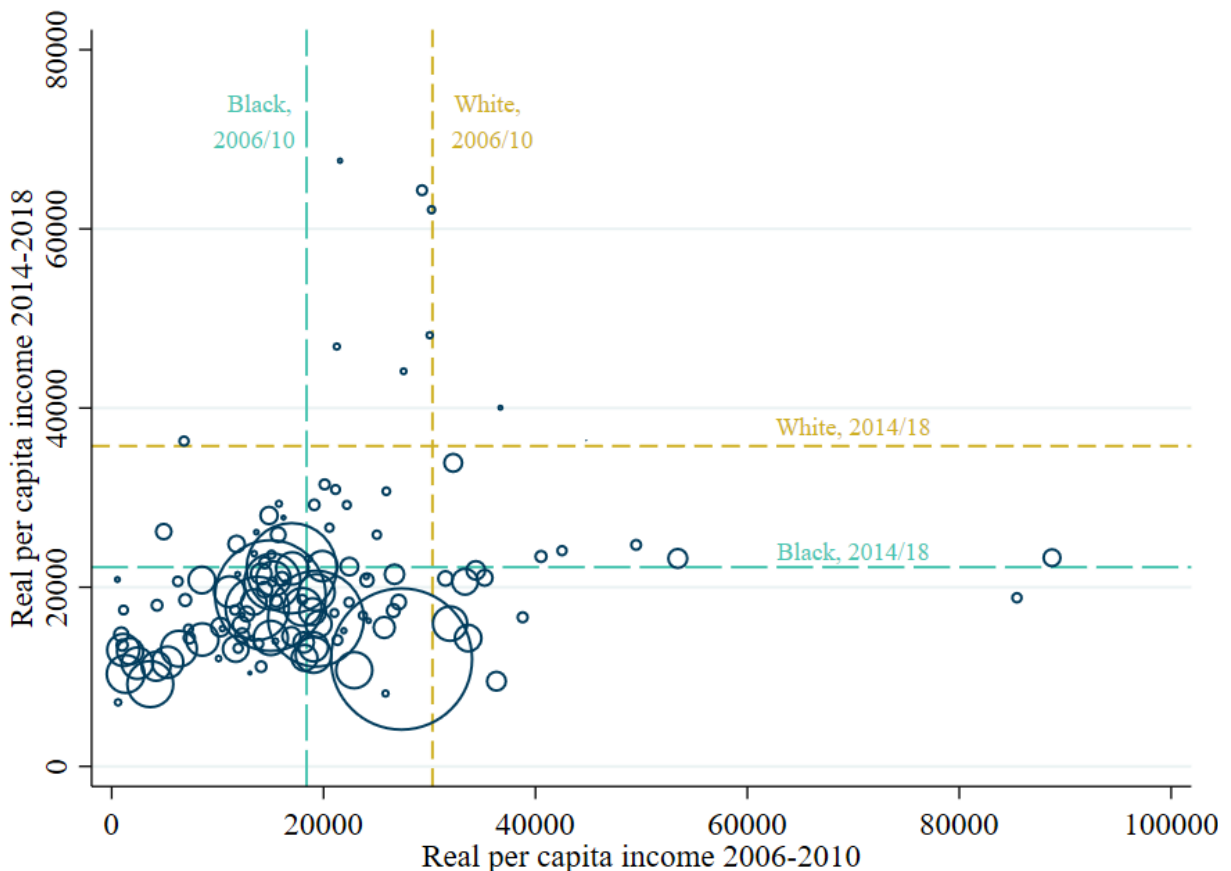
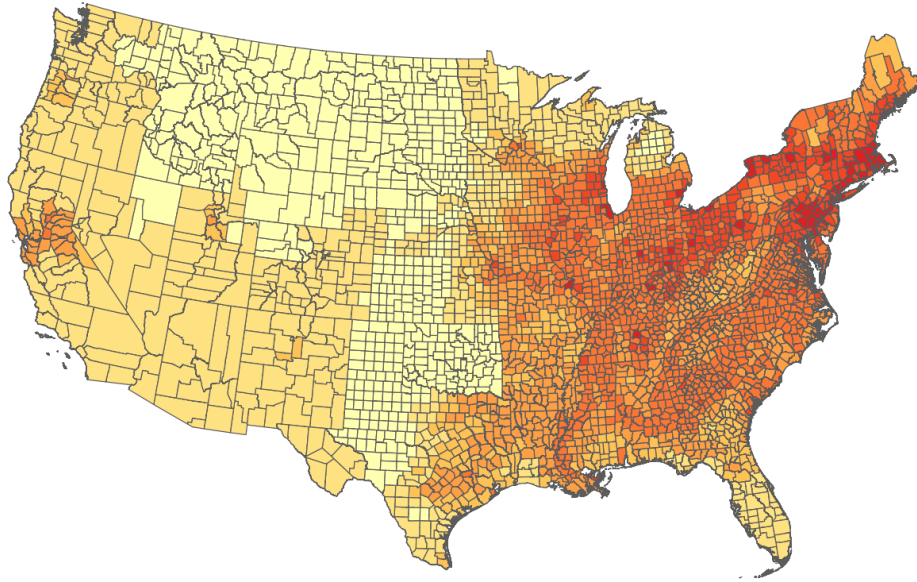


Figure A.1: **Economic marginalization:** The circles indicate average reservation income per capita with their size the average population in 2006-2010. Data from the American Community Survey, 2014-2018 and 2006-2010.

## A.2 Settler Population Density Discussion

Estimating settler population densities during US territorial expansion based on county boundaries is non-trivial. Counties in 1860 were much larger than in 2010 and thus spatial densities using 1860s counties could be misleading. Figure A.2 describes this issue, showing population densities from Bazzi et al. (2020) based on 2010 counties relative to population density from Walker (1874) using 1860/1870 counties. Working from digitized maps on settler population density from the Statistical Atlas of the United States, Eleventh Census created by Henry Gannett (1898) show large areas without non-Indigenous settlement (which would have been the case in 1870), Bazzi et al. allocate very small population numbers over whole counties giving the impression of non-Indigenous settlement across the whole country by 1870.

In Figures A.3 and A.4 we show how Figures 4 and 7 would be different if we instead used population estimates from data on population digitized from the maps from Gannett (1898). Note that in Figure 7 the categories of “no settlers” and “Under 2” are collapsed into one since the data from Bazzi et al. (2020) has non-zero settler population density everywhere (even if it is extremely low). The impact of settlement differs in timing but both show a low probability of land remaining in Indigenous jurisdiction by 1870. The main point made these figures holds regardless of which data source is used.



(a) Density, [Bazzi et al. \(2020\)](#)



(b) Density, [Walker \(1874\)](#)

Figure A.2: **Conflicting data on non-Indigenous US population density in 1860/1870:** Data acquired from Census counties (from [Bazzi et al. \(2020\)](#) in panel A) conflict with less spatially restricted data such as those from [Walker \(1874\)](#) in panel B.

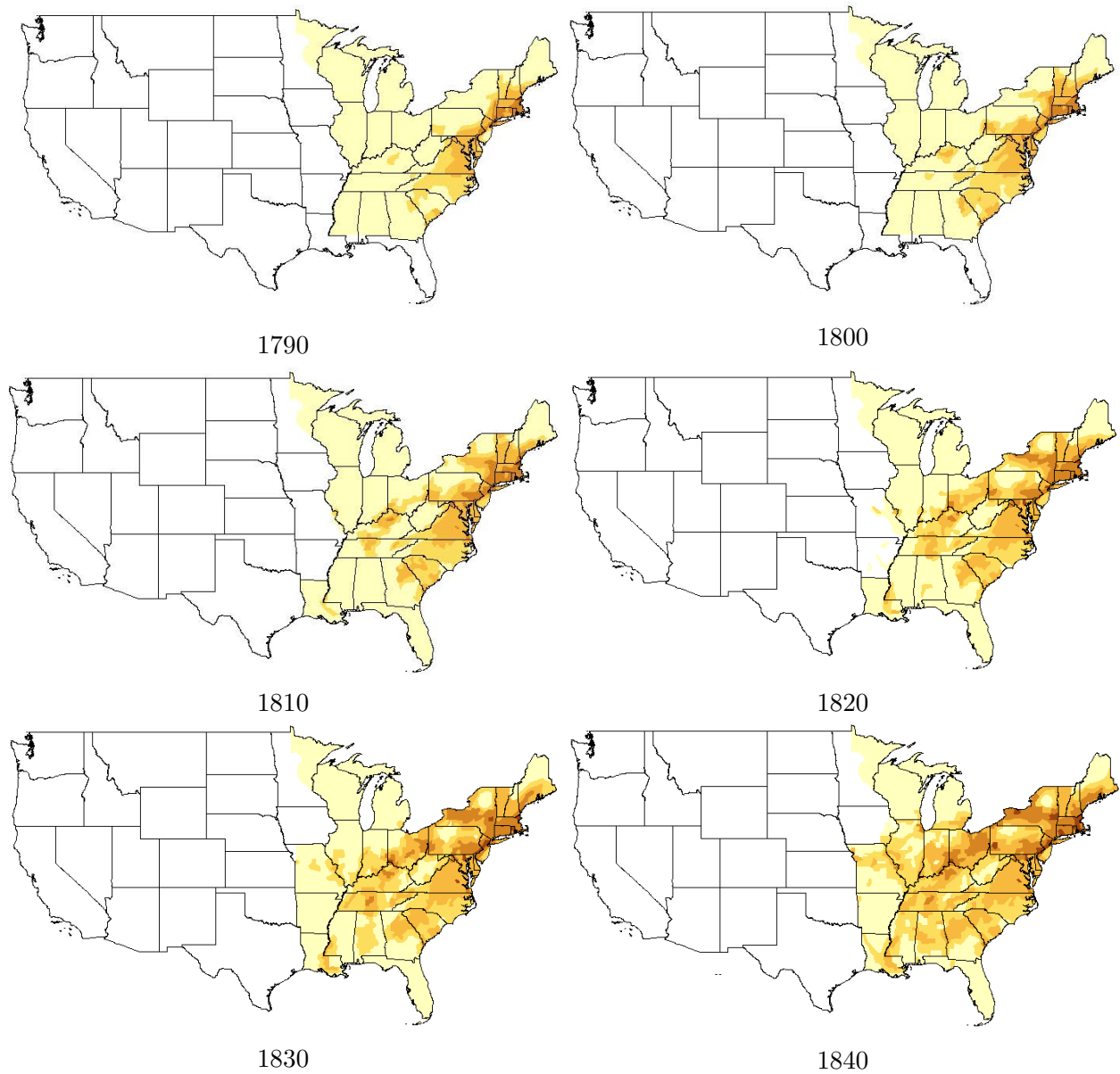


Figure A.3: **Non-Indigenous US population density:** Lightest area 0-1 people per square mile; 2-5, 6-17, 18-44, 45-90, and 91 and over the darkest. Data from the Statistical Atlas of the United States, Eleventh Census. Henry Gannett, 1898.

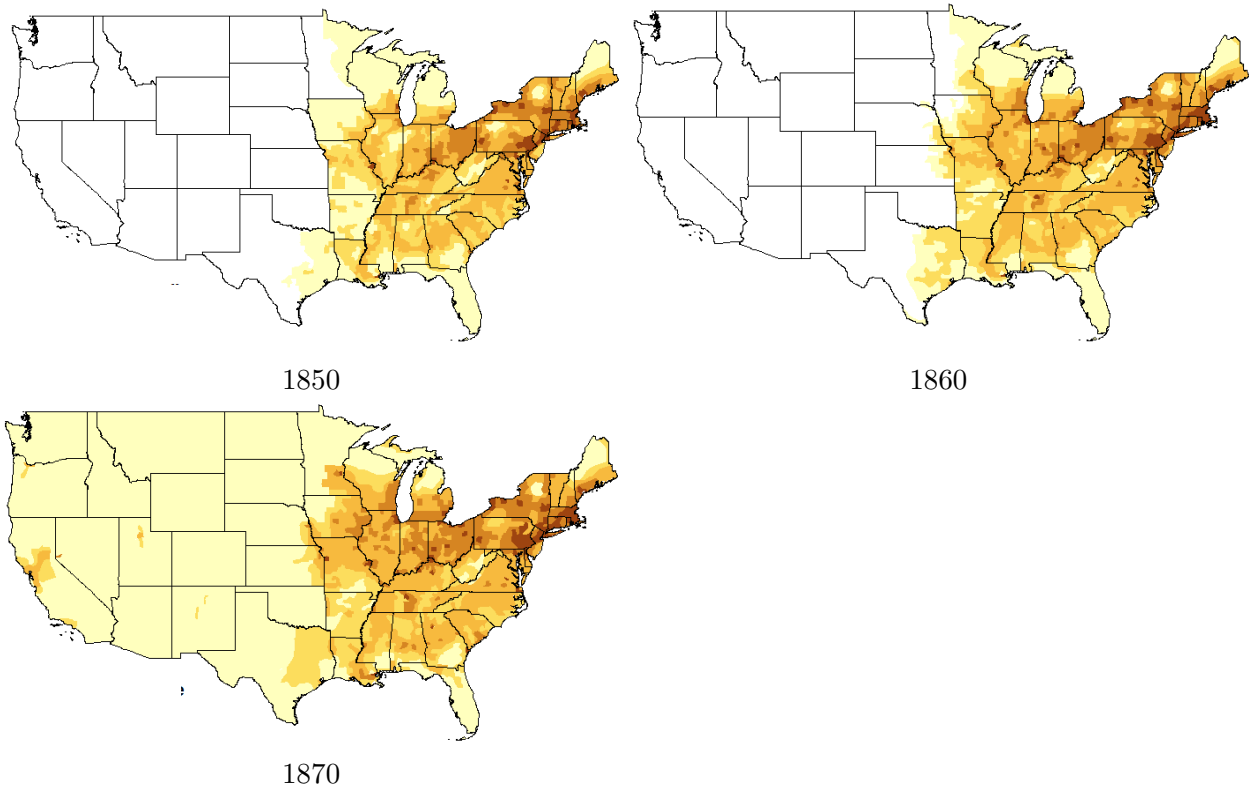


Figure A.3: **Non-Indigenous US population density – continued:** Lightest area 0-1 people per square mile; 2-5, 6-17, 18-44, 45-90, and 91 and over the darkest. Data from the Statistical Atlas of the United States, Eleventh Census. Henry Gannett, 1898.

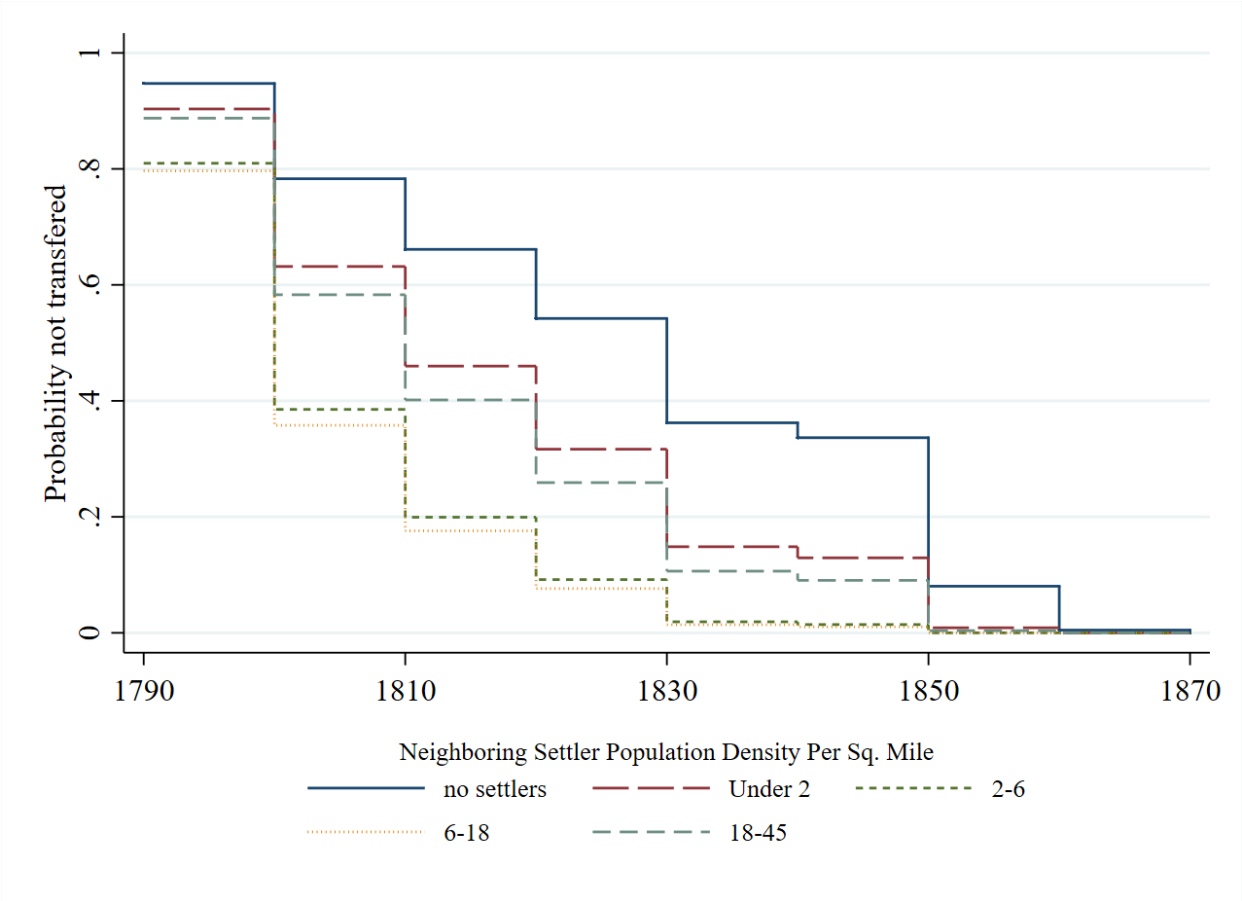


Figure A.4: **Probability that land remains in Indigenous jurisdiction (robustness):** Cox-Proportional Hazard Model of the probability of a particular county being transferred in a particular decade based on the maximum settler population density in a neighboring county not part of the same land transaction at the start of the decade. The model conditions on the natural log of county square miles and on the settler population density within the county at the start of the decade. Data from the Statistical Atlas of the United States, Eleventh Census. Henry Gannett, 1898. Census 2010 US county files used as geographic unit.

### A.3 Reversal or Persistence of Fortunes Robustness

In the main text in Figure 10, we document a local persistence of fortunes for the full US population in panel (a) but a local reversal of fortunes for the Indigenous population in Figure (b) at the geographic unit of the census tract. However, estimates of Indigenous populations in 1500 are coarse at best and arguably the census tract may be too fine a geography to make compelling statements about. In Figure A.5 on the next page we show that similar results hold if we use the state as the unit of observation - we see a local persistence of fortunes including the Full US population in panel (a) and not among the Indigenous population in panel (b).

### References

- Bazzi, S., M. Fiszbein, and M. Gebresilasse (2020). Frontier culture: The roots and persistence of “rugged individualism” in the united states. *Econometrica* 88(6), 2329–2368.
- Maloney, W. F. and F. Valencia Caicedo (2016). The persistence of (subnational) fortune. *The Economic Journal* 126(598), 2363–2401.
- Walker, F. A. (1874). *Statistical atlas of the United States based on the results of the ninth census with contributions from many eminent men of science and several departments of the government*. New York J. Bien, lith: United States Census Office. 9Th Census, 1870.



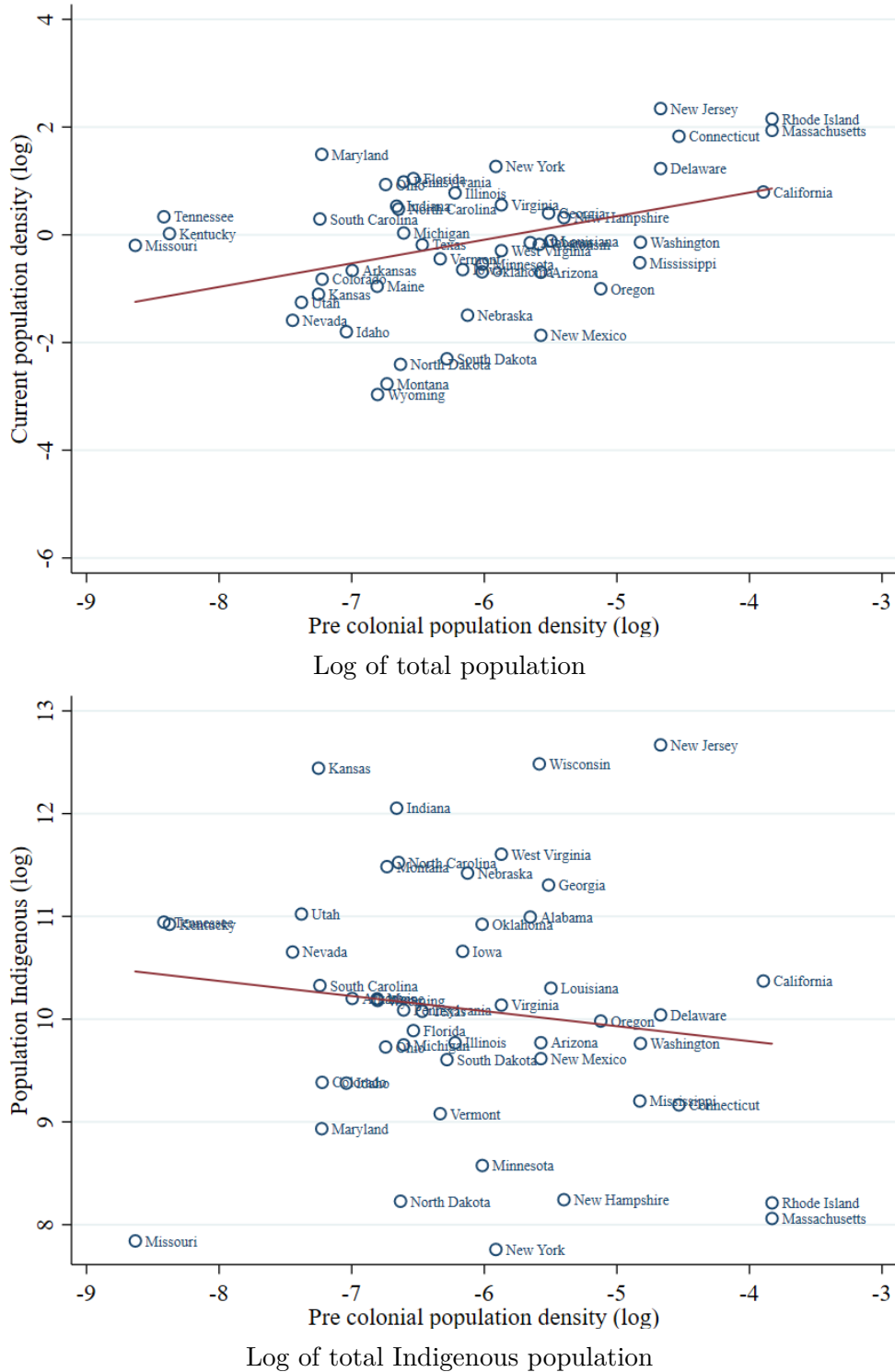


Figure A.5: **Persistence and reversal? (Robustness)** Binned scatter plots of pre-colonial population density on modern income by state. Data from the American Community Survey, 2014-2018 and Maloney and Valencia Caicedo (2016).