

Great Recession and American Indian and Alaska Natives and Native Hawaiians and Pacific Islanders

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Abstract

This article examines the earnings and employment experience over the Great Recession for American Indians, Alaska Natives, Native Hawaiians and Pacific Islanders residing in the U.S. I compare these populations to non-Hispanic whites over the same time period with respect to median earnings and inequality, labor force participation rates, earnings by location, educational attainment and occupational status. I find that the AIAN population has the lowest median earnings but also the highest level of earnings inequality. NHPI and AIAN experience a sharp increase in earnings inequality over the Great Recession and AIAN have a pronounced drop in labor force participation. Indigenous peoples employed in food services occupations experienced the least amount of earnings decline over the Great Recession while those employed in construction and sales experienced larger declines. The analysis shows that there are stark differences across time, space and occupation for these groups over the Great Recession.

Keywords: Great Recession, Indigenous Peoples, Earnings, Inequality

JEL classification: J15, J31, D63

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1 Introduction

While the Great Recession (2008-2011) had a significant effect on the country as a whole, it had a disparate impact on different parts of the economy by industry and region. The nature of the Great Recession and its impact on housing markets, construction and associated industries meant a reduction in household wealth as well as employment (Danziger, 2013; Foster et al., 2016; Meyer and Sullivan, 2013; Smeeding, 2012; Yagan, 2019). It significantly increased household debt and default rates and depressed consumer spending (Kaplan et al., 2020; Mian et al., 2013).

There is increasing evidence that the impact of the Great Recession on minority groups was greater than for non-Hispanic Whites. Kochhar and Fry (2014) examine the impact on wealth and assets using the Survey of Consumer Finance data. In that analysis, the authors find that differences in wealth between White and Black households in the U.S. increased from 10-fold to 13-fold over the course of three years (2010-2013); primarily due to the decrease in housing values and the actual loss of homes as an asset for these populations. In additional research, Pfeffer et al. (2013) finds that median wealth fell for non-Hispanic Whites and Asians to about 69% of their pre-Great Recession levels by 2011, however for all other race groups that percent was just 25%. Due to data limitations such as sample size, it is difficult to calculate these types of analyses for wealth and asset ownership separately for smaller race and ethnic groups in the U.S. Therefore, in the analysis that follows, I will examine primarily earnings and labor force participation for Indigenous peoples of the United States.

Indigenous peoples occupy a different space than other minority groups in the U.S. as they are also a separate political class as well. In this regard, some, though not all, Indigenous peoples are self-governing and manage resources and territories. As a result, some of these tribal government nations and Indigenous communities weathered the Great Recession differently from other race and ethnic groups, primarily due to their unique political and economic position in their local and regional communities. In particular, tribal governments for American Indians and Alaska Natives operate independently of state, local and municipal governments (Duthu, 2008; Wilkins, 2002). In many instances, tribal governments operate their own school, health and educational systems (Strommer and Osborne, 2014). Additionally, in recent decades, tribal governments have embarked upon gaming operations as well as hotel and leisure industries (Akee et al., 2015; Conner and Franklin, 2019; Conner and Taggart, 2013). These new activities have increased employment and earnings of both tribal citizens and non-tribal citizens in the local area. As a result, tribal enterprises serve as an important economic pillar in many of their communities (Akee et al., 2014).

In this analysis, I examine the experience of the American Indian and Alaska Native (AIAN) population and Native Hawaiian and Pacific Islander (NHPI) population over the period of the Great Recession. I examine the median earnings by year and group as well as measures of earnings inequality over time. Next, I examine labor force participation rates by group over time and earnings trends by location on or off of AIAN reservations and/or NHPI homelands. Finally, I examine earnings by group by year by educational attainment and selected occupation categories.

The analysis reveals that there are persistent differences in median earnings for AIAN, NHPI and non-Hispanic Whites in the U.S. The level of earnings inequality over the Great Recession increased most dramatically for the NHPI population and AIAN population to a lesser extent. On the other hand, labor force participation rates dropped most dramatically for the AIAN population over this time period. Earnings diverge over the Great Recession for American Indians residing on and off of

reservations; those residing off of reservations on average are earning more over time. There is some evidence that earnings for the low-educated are less affected by the Great Recession for American Indians and Alaska Natives than their more educated counterparts; this does not hold for the NHPI population. Finally, I find that individuals from the AIAN and NHPI groups that were employed in food services were the least adversely affected by earnings losses over the Great Recession; those employed in the construction industry were, as expected, the most affected on average in all groups.

2 Data Description

This analysis uses data from the 2007-2018 American Community Surveys 1-Yr data using data from the Minnesota Population Center IPUMS USA (Ruggles et al., 2018). That data is a snapshot of the U.S. population at that point in time and provides approximately a 3-5% sample of U.S. households for each year. In the analysis that follows, I examine the results for three race groups in the U.S. : American Indians and Alaska Natives (AIAN), Native Hawaiians and Pacific Islanders (NHPI) and non-Hispanic whites (NHW). The first two groups comprise the Indigenous peoples of the U.S. and the third group provides a useful comparison group for earnings changes and trends over time. For the AIAN and NHPI populations, I include individuals who either identify as those race groups alone or in combination with other race or ethnicities; therefore, this is the most inclusive and expansive definition of these two race categories.

In Table 1 I provide some summary statistics for these three groups. I restrict analysis to individuals who are aged 15-64 in all years so that this analysis covers the working age population in the U.S. The first variable is total personal income which measures an individual's total pre-tax personal income or losses from all sources for the previous year. I report this in 2018 dollars and it is approximately \$26,000 for the AIAN population and it is \$30,000 for the NHPI population while it is \$46,000 for the NHW population. The final two columns provide a t-test for the equality of the means between the two Indigenous peoples groups and that of NHW. In the next row, I show that the total personal earnings for the AIAN population is about \$22,000, it is \$28,000 for NHPI and \$41,000 for NHW. Total personal earnings reports the income earned from wages or a person's own business or farm for the previous year. I find that the average age is higher for NHW than for AIAN or for NHPI. In general, the male proportion of the samples are evenly divided among males and females. The sample of NHW are more likely to be married on average (55%) as compared to AIAN (37%) and NHPI (42%) samples. I also report the average poverty level for each of these three groups; AIAN are on average 236 percent of the federal poverty level while NHPI are 283 percent of the level and NHW are 338 percent of the poverty level. Employment levels differ across the three groups as well; AIAN have the lowest employment levels at 53% and NHPI have the next lowest at 62% while NHW has almost 70% employment. Finally, I have disaggregated the educational attainment into a greater than high school degree or not. On average the AIAN population has 39% with a high school degree or more, the NHPI population has about 42% with a high school degree or more while the NHW population has about 54% with a high school degree or more.

Table 1: Table of Means

Variable	AIAN		NHPI		NHW		T-Test		T-Test	
	Mean	Std.	Mean	Std.	Mean	Std.	AIAN NHW	NHPI NHW		
Personal Income	26,209	39,483	30,686	43,251	46,074	65,970	-326.0	-99.0		
Personal Earnings	22,279	37,095	28,000	41,388	41,317	62,435	-332.4	-89.5		
Age	38.4	14.6	36.1	14.1	41.5	14.5	-141	-106		
Male	0.49	0.49	0.49	0.49	0.49	0.49	0.83	-0.9		
Married	0.37	0.48	0.42	0.49	0.55	0.49	-238	-69		
Poverty	236.1	170.6	283.2	173.8	338.0	167.3	-396	-88		
Employed	0.53	0.49	0.62	0.48	0.69	0.46	-214	-37		
>High School Deg.	0.39	0.48	0.42	0.49	0.54	0.49	-207	-68		

Note: There are 453,109 observations for the AIAN sample and 78,399 observations for the NHPI sample and 16,270,376 in the Non-Hispanic White sample. All dollar values are inflated to 2018 dollars using the Bureau of Labor Statistics CPI-Urban Index for June.

3 Income, Earnings and Poverty for the AIAN and NHPI Populations

3.1 Earnings Measures and Inequality Measures

In Panel A of Figure 1 I provide the median of the earnings distribution as reported in the ACS by year for three race groups: American Indians or Alaska Natives; Native Hawaiians or Pacific Islanders; and non-Hispanic whites. These median amounts are presented by year by group for 2007-2018. All dollar values are inflated to 2018 dollars using the CPI-Urban Index for June of each year. Qualitatively, the results indicate that NHW having a higher overall level of earnings than NHPI and AIAN. The median earnings for AIAN range from \$12,000 to as low as \$5,000 and then back up to \$10,000 by 2018; for NHPI, median earnings range from \$19,000 to a low of \$12,500 and back up to \$20,000 by 2018. For NHW, median earnings ranges from \$28,000 to a low of \$22,000 and back up to \$28,000 by 2018. The median earnings for all three groups are approximately \$10,000 to \$15,000 lower than the mean earnings for the same groups. In Appendix Figure A1, I provide the mean earnings for these three groups by year. This indicates a great deal of very high income individuals in all three groups which are skewing the average earnings upwards away from the median. In general, the results indicate very little real improvement in earnings for any of these three groups over the course of these 11 years.

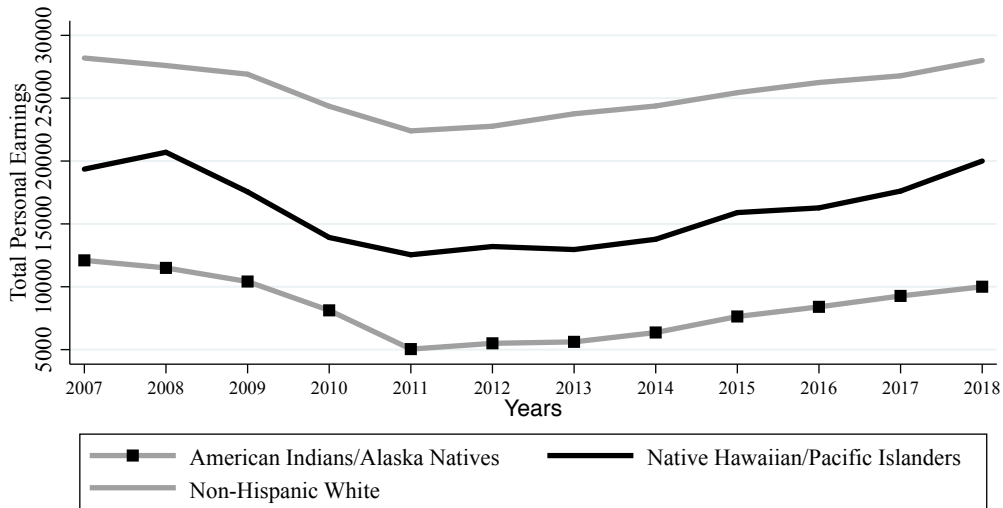
The previous figure shows that there are level differences in median earnings across the three race groups examined. Next in Panel B of Figure 1 I show earnings inequality over time for these same three groups in the next figure. I compute a Gini coefficient for each group for each year and plot those points on the figure that follows. The higher the Gini coefficient the larger the earnings inequality in that particular group in that year; a Gini coefficient closer to one indicates that a few individuals are earning the entire sum of earnings while a coefficient closer to zero indicates a fairly equal distribution of earnings. The results provided below indicate that the AIAN population starts out with the highest levels of earnings inequality in 2007 and have persistently higher Gini coefficients than the other groups over all years. The earnings inequality peaks in 2011 at 0.70 and then trends downward in subsequent years. For NHPI populations there is a noticeable increase in earnings inequality over the first few years in our sample and then the inequality stabilizes around 0.64 and trends downward slightly. Earnings inequality for NHW is fairly constant with a slight upward movement in 2009 and with a very modest downward trend after 2011.

While the Gini coefficient analysis provides an overall picture of the earnings inequality across time for these three race groups, Appendix Figures A2 and A3 identify changes in earnings inequality in the top and bottom halves of the earnings distribution. In Appendix Figure A2 I show the ratio of log earnings of the 90th to the 50th percentile of the earnings distribution for each race group by year while Appendix Figure A3 shows the ratio of log earnings of the 50th to 10th percentile of the earnings distribution.

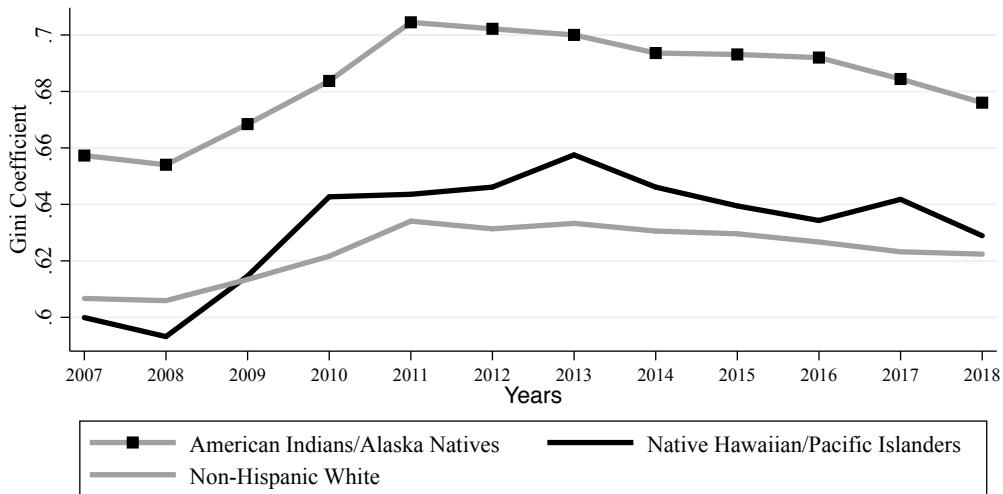
The log earnings ratio for the 90th and 50th earnings percentiles for American Indians and Alaska Natives increases in the first few years of the Great Recession and remain constant until 2012 and then there is a reduction in the log earnings ratio. A larger ratio would indicate that the two percentiles are getting further away from one another (an increase in inequality) while the converse would indicate that the two percentiles are moving toward one another (a decrease in inequality). Examining the log ratio for the NHPI population there is divergence (or an increase in the ratio) for the log 90/50 earnings

Figure 1: Median Earnings and Gini Coefficients

Panel A: Median Total Personal Earnings



Panel B: Gini Coefficients for Total Personal Earnings for AIAN and NHPI



Notes: All dollar values are inflated to 2018 dollars using the Bureau of Labor Statistics CPI-Urban Index for June.

ratio. Examining the raw data in Appendix Table A1 it is clear that the change is due to a decrease in real median earnings in the middle of the observed time period. However, there is a resumption of earnings gains in the later part of the time period. Finally, for comparison I include NHW and note that there is not a lot of change for that group over time.

In Figure A3 I show the log earnings ratio for the median with the bottom decile of earners

for each of these race groups by year. The log earnings ratio declines for the AIAN group over this time period. Examining the raw data, the bottom decile of AIAN earners are increasing their earnings relative to the median earner. Therefore, this relative decrease in earnings inequality is due to the bottom earners realizing some real improvement in earnings. As noted in Panel B of Figure 1 the median for that group was quite low – often below \$10,000 for the majority of the observed years; as a result, there is a lot of room for improvement in that regard. The change for NHPI is quite noisy, however, there does not appear to be a systematic upward or downward trend over time apart from a regression to the mean that occurred after a spike in inequality in 2011. The spike in the NHW line is driven by changes at the bottom earnings decile.

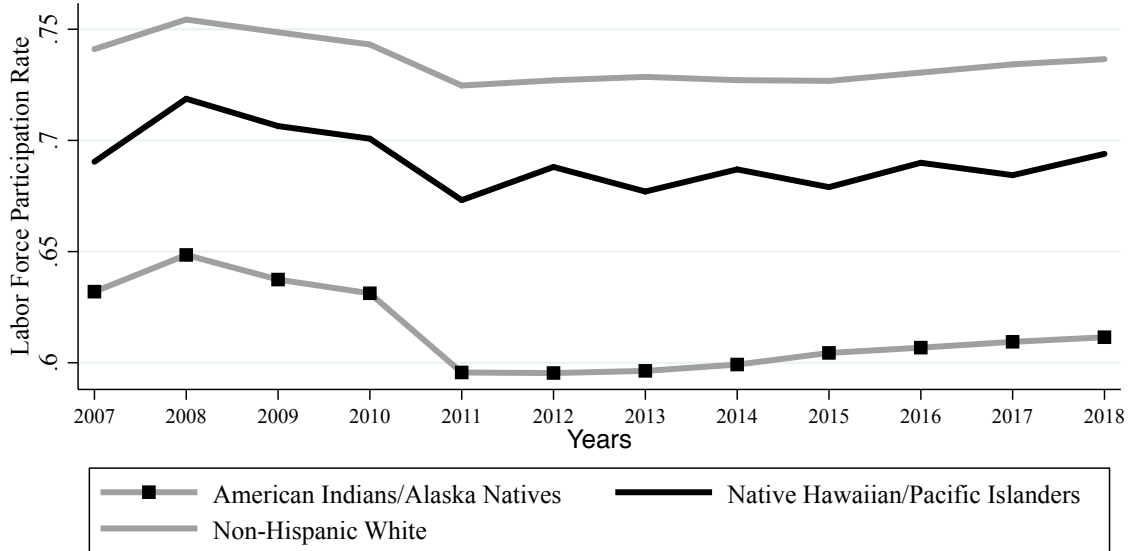
3.2 Labor Force Participation and Earnings by Location

An important outcome of the Great Recession is that it may have discouraged many workers inducing them to leave the labor force permanently (Erceg and Levin, 2014). In the Panel A of Figure 2 I provide the labor force participation rate for AIAN, NHPI and NHW over the Great Recession. All three groups realize a reduction in the labor force participation rate by 2011 from the relatively high rates in 2007-2008. The largest relative drop is for the AIAN population which drops to about 60% and remains there for the rest of the time period. There is some rebounding for the NHW and NHPI populations, however, the decrease in labor force participation rates were not nearly as dramatic as they were for AIAN in this time period. In Appendix Figure A6 I provide the employment rate for these three groups over time. These results indicate that employment levels rebounded over the period of the Great Recession. For the AIAN population in particular, however, given the large and persistent decrease in their labor force participation rate the rebound in employment may simply reflect a reduction in the denominator for this employment rate.

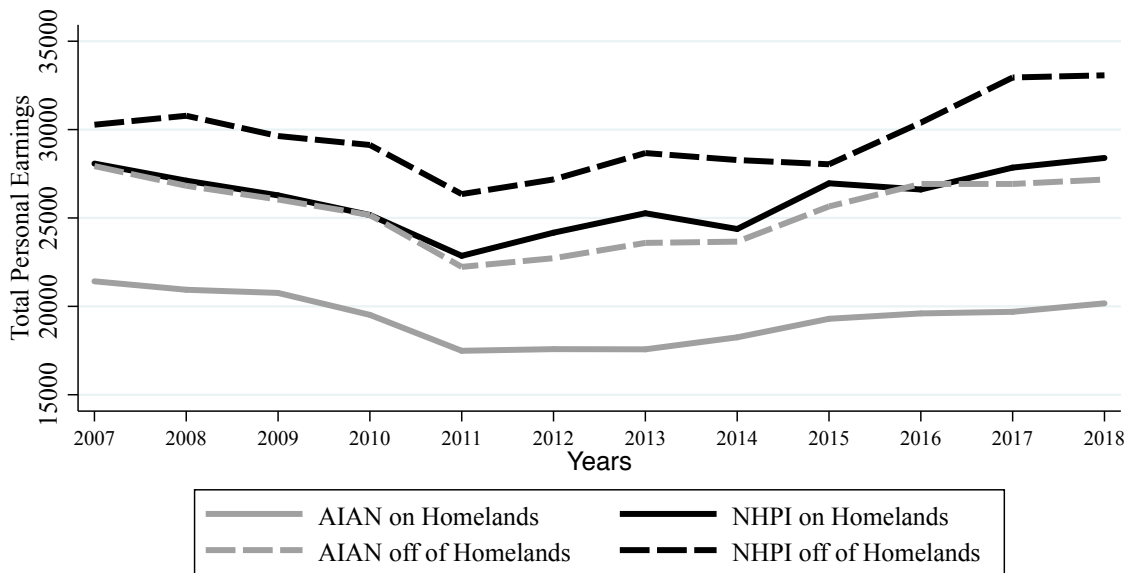
The Great Recession had a differential impact on different parts of the country and one might expect there to be a similar impact for Indigenous peoples in the U.S. as well (Yagan, 2019). Panel B of Figure 2 provides earnings by race group for individuals located on or off of American Indian reservations, Alaska Native Villages or Native Hawaiian homelands. There are level differences across all three race groups. AIAN residing on reservations or in villages tend to have the lowest average earnings in real \$ 2018 as compared to all other groups; average earnings start out around \$20,000 and do not deviate too far from that amount over the time period examined. On the other hand, AIAN populations residing off of reservations or villages earn about \$5,000-7,000 more in earnings. Native Hawaiians residing on Native Hawaiian homelands similarly earn slightly less than their off homeland counterparts. However, these differences are not quite as large as for the AIAN population. These results may provide some indication that reservations/homelands provide a distinctly different set of economic opportunities for all race groups. There are often lower earnings for these locations which may reflect a lack of employment and business opportunities or they may reflect the viability of alternative non-market or non-employment based earnings or economic opportunities. In particular, reservation or homeland based economies may rely more on subsistence hunting, farming, gathering, fishing or trapping; none of these activities would show up as employment or earnings in existing data sources.

Figure 2: Labor Force Participation and Earnings by Location

Panel A: Labor Force Participation Rates



Panel B: Total Personal Earnings by Location on or off of Homelands



Notes: All dollar values are inflated to 2018 dollars using the Bureau of Labor Statistics CPI-Urban Index for June.

3.3 Earnings by Educational Attainment

In Panel A of Figure 3 I provide the total personal earnings for each race group by year for two broad educational attainment categories: high school degree or less, more than a high school degree.¹ I show the earnings for American Indians and Alaska Natives as a percent of their average earnings in 2007 by educational attainment. All dollar figures are inflated to 2018 dollars in this analysis. The first observation is that there is a noticeable decrease in real earnings for both educational categories of workers in this time period. It is more pronounced, however, for those with more than a high school degree such that earnings are only about three-quarters that of the 2007 level in 2011. The other important fact is that the level of real earnings do not reach parity with their 2007 earnings by the end of our time period; it is still less than 95% of the 2007 earnings in real terms.

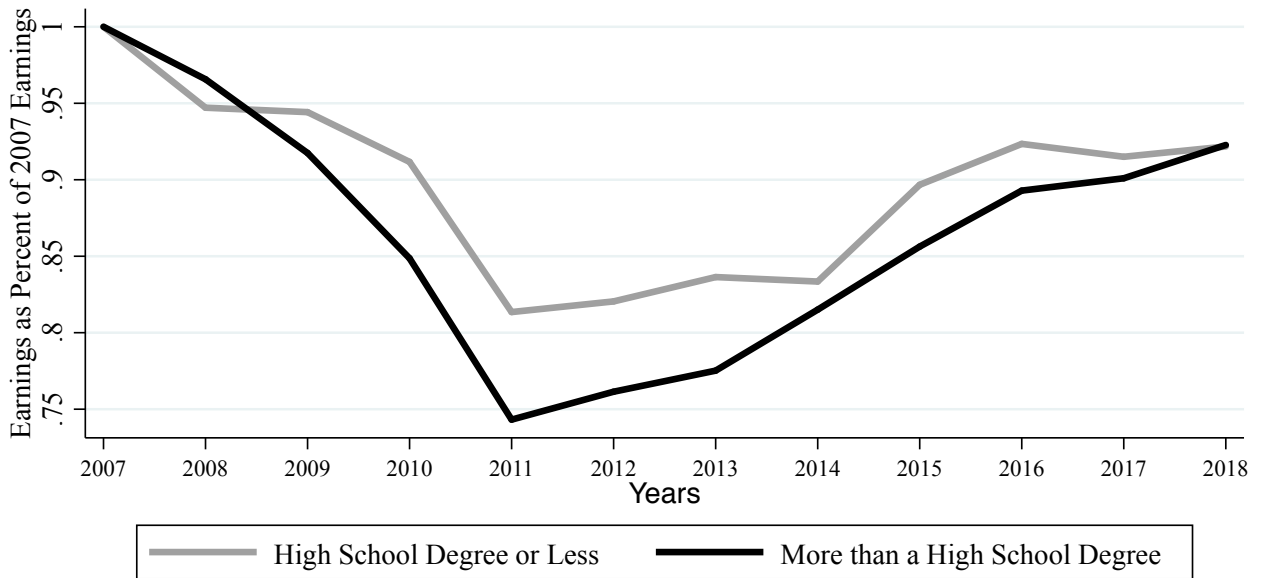
Panel B of Figure 3 provides a similar analysis for the NHPI population. The analysis shows that there is a decrease in real earnings for both educational attainment groups in 2011 and 2012. The differences do not appear as stark by educational attainment for the NHPI population as it was for the AIAN population. There is some evidence that the workers from lower education categories have made up some of the losses in earnings over the time period of the Great Recession; there is almost a return to parity for those with higher education.

In Appendix Table A5 I show comparable figure for the non-Hispanic white population. On average, the results approximate the AIAN experience with the exception that at the depth of the Great Recession the loss in earnings was larger for the AIAN at only 75% of the 2007 earnings while for the non-Hispanic white population it was only slightly less than 85%. Individuals with higher educational attainment realized the steepest drop in real earnings over this period as compared to their less educated counterparts.

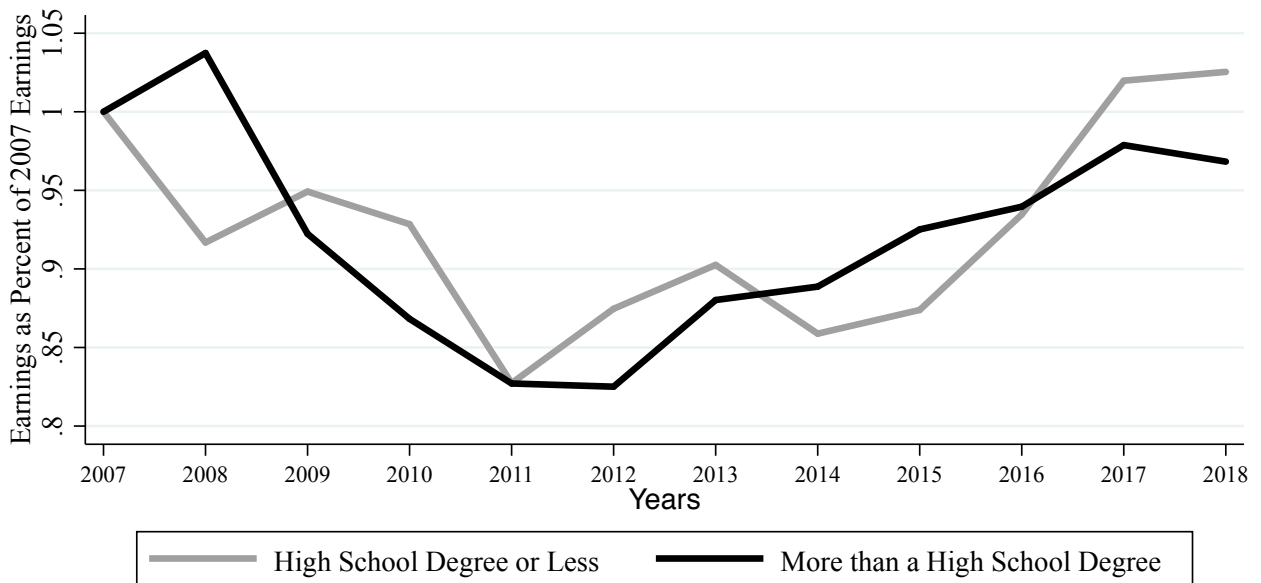
¹Separating the educational attainment into three categories, where a high school education alone is a third category, does not provide qualitatively different results.

Figure 3: Total Personal Earnings by Educational Attainment

Panel A: American Indians and Alaska Natives



Panel B: Native Hawaiians and Pacific Islanders



Notes: All dollar values are inflated to 2018 dollars using the Bureau of Labor Statistics CPI-Urban Index for June.

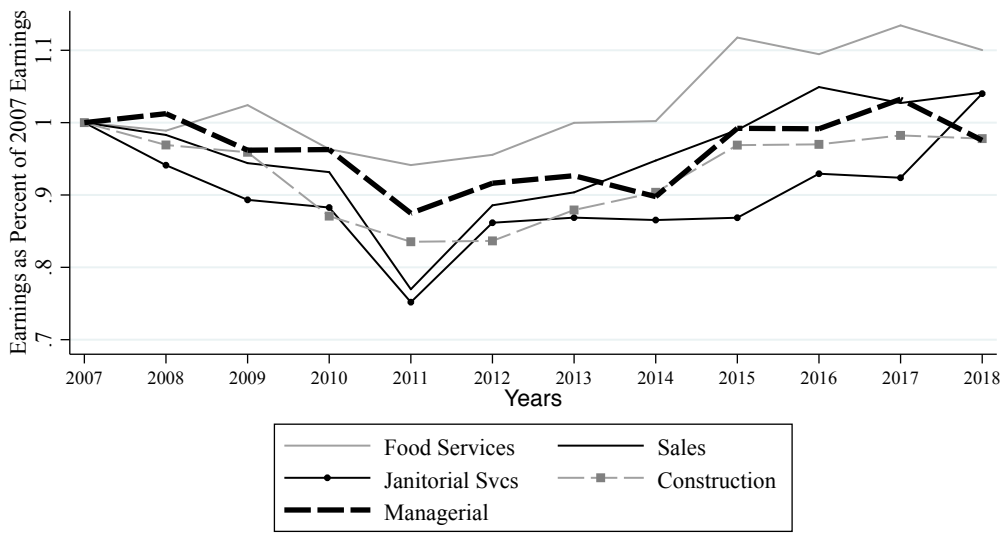
3.4 Earnings by Occupational Categories

In Figure 4 I provide the earnings as a percent of the 2007 earnings by race group for selected occupational categories. In the first panel, I provide the results for the AIAN population for four blue collar occupations: food services, retail sales, janitorial services and construction. I include managerial occupations as a useful comparison in the analysis. All dollar values are inflated to 2018 dollars. The data indicate that there were sharp drops in real earnings in the sales and janitorial services occupations in 2011. Food services, on the other hand appears to have had the least negative impact of all of the occupations examined; indeed, this occupation ends 2018 with having a higher real earnings than 2007 which is not the case for many other occupations. Managerial occupations realize a decline in their real earnings but there is a rebound towards the end of the data period; in general the decrease in earnings is less severe than it was for other occupations - with the notable exception of food services.

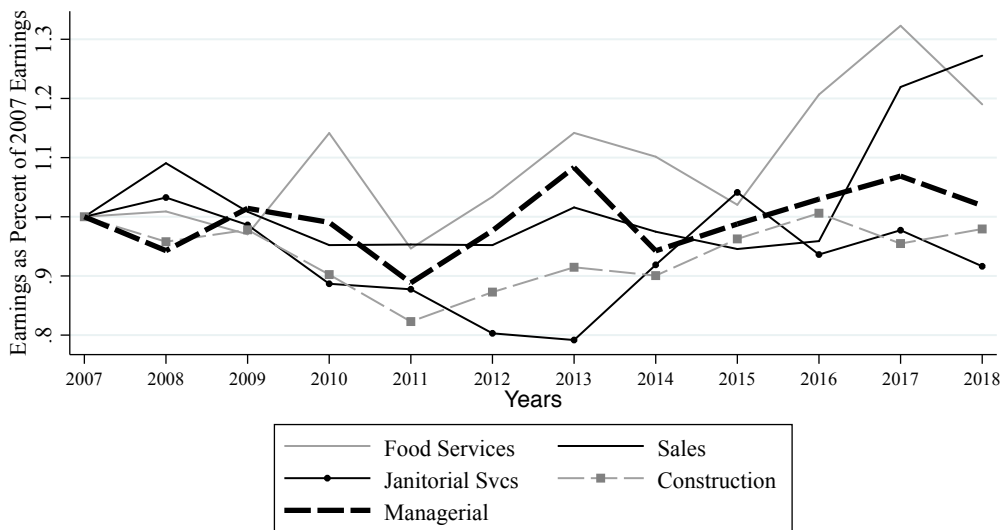
In Panel B of Figure 4 I provide a similar analysis for Native Hawaiian and Pacific Islanders. The trends are less clear and more erratic than for the AIAN population. On average it appears that the earnings in most occupations are fairly constant with the exception of construction and janitorial services which had a significant decrease relative to 2007 earnings in 2011-2013. However, there is significant improvement in earnings by the end of the data series. Food services occupations appear to be at or above the 2007 level for many years in the data series; there is a significant increase in earnings for sales in the last two years of the data series. In Appendix Figure A4 I provide the same analysis for non-Hispanic whites. The results are qualitatively similar to that of the AIAN population. Once again, the decrease in earnings is not large as it was for the AIAN population; however, the relative performance of different occupations mirrors that of the AIAN population.

Figure 4: Total Personal Earnings by Selected Occupational Categories

Panel A: American Indian and Alaska Natives



Panel B: Native Hawaiian and Pacific Islanders



Notes: All dollar values are inflated to 2018 dollars using the Bureau of Labor Statistics CPI-Urban Index for June.

4 Discussion and Conclusion

The previous section provided a picture of the AIAN and NHPI earnings and employment experience over the period of the Great Recession in the U.S. The primary findings indicate persistent differences in median earnings across groups and races. I also find that there are higher levels of earnings inequality within the AIAN and NHPI groups than for NHW. There also appears to be a drop in the labor force participation rate for the AIAN group during and after the Great Recession; while it decreases for other groups, there is a rebound in subsequent years.

These results indicate that there are stark differences in the experience of different Indigenous peoples in the U.S. These differences are found both in the level of earnings and the distribution of those earnings in those populations. An important determinant of earnings are skills and educational attainment. In subsequent analyses, I examined the extent to which educational attainment insulate individuals from the impact of the Great Recession. The analysis indicates that those with higher educational attainment suffered the largest earnings losses on average over the Great Recession. These results held for AIAN and the NHW population, but the impact was approximately similar for both educational groups of NHPI.

I also separated the earnings by year by group by a few selected occupational categories. It is clear that certain occupations were more adversely affected by the Great Recession. In particular, the financial crises originated in the sub-prime housing lending markets. The result was a severe contraction in housing prices and new construction ([Danziger, 2013](#); [Myers and Lee, 2018](#)). As a result, individuals employed in these industries were at higher risk of job and/or earnings loss. To a large extent, these industries tend to have high proportions of minority workers ([Yaya, 2018](#)). In this regard, the results show that the earnings for both AIAN and NHPI in these occupations took some of the biggest relative earnings losses over the Great Recession. Food services fared the least worst.

Typically, the experience of one recession may be useful to infer how more recent recessions will impact certain parts of the economy. The experience of the Great Recession, however, may not provide a useful guide for the economic impacts that may occur in the current COVID-19 pandemic. In the previous recession, there was no public health issue that limited the ability of tribal reservation enterprises to re-open in a timely manner. Additionally, certain occupations are on the frontline of exposure to the COVID-19 virus; the majority of individuals employed in these occupations tend to be minorities. Thus, the findings that the AIAN and NHPI individuals employed in food service and sales occupations were less likely to be affected by earnings losses may actually be more at-risk in the current recessionary episode. Finally, the long-term health impact and death rates which have been shown to disproportionately affect minorities will have an effect on economic recovery rates as well. Indigenous peoples in the U.S. have already been disproportionately affected by the COVID-19 pandemic; in California, for instance, the NHPI population has a death rate that is four times its proportion of the state population ([CalHealth, 2020](#)). While on the Navajo reservation, they are facing one of the highest rates of COVID-19 cases in the country ([Romero and Healy, 2020](#)). The current economic downturn may play out and have much more dire impacts than the Great Recession did for Indigenous peoples in the U.S.

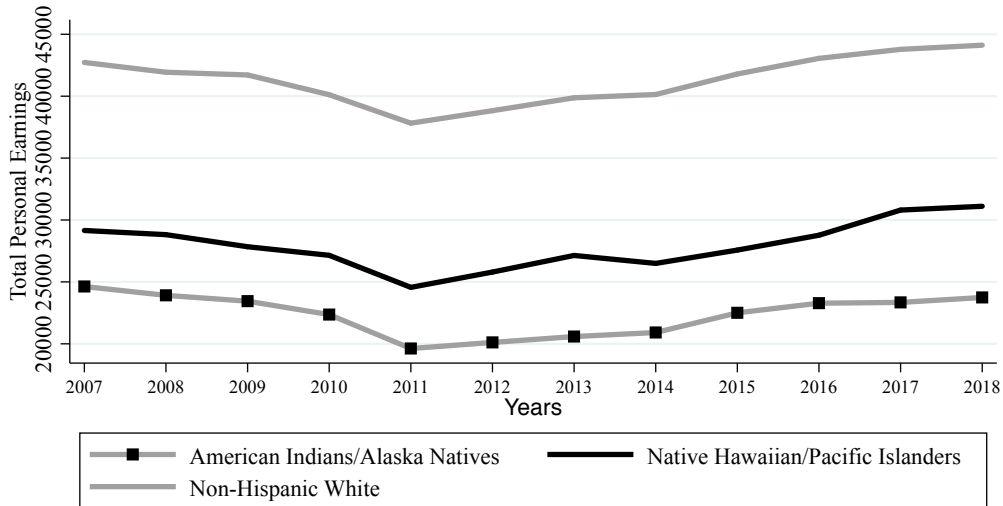
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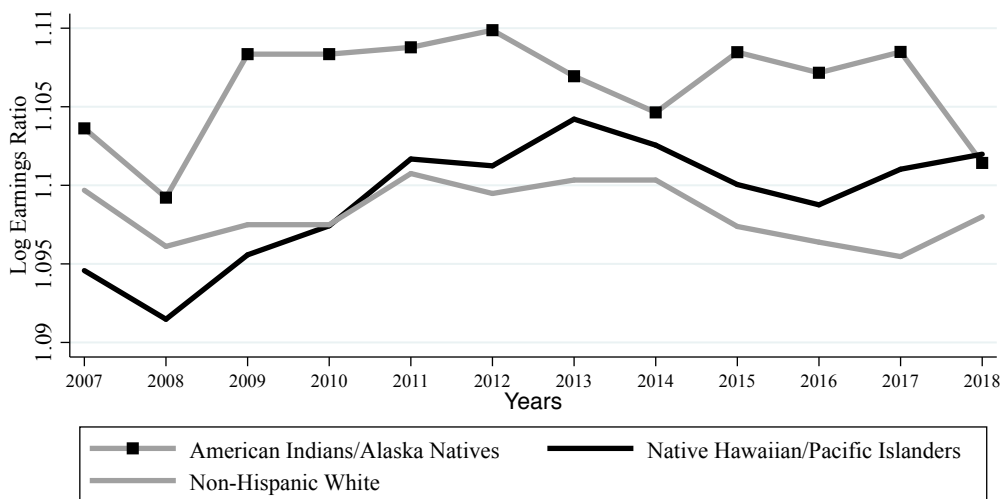
A Appendix Figures

Figure A1: Mean Total Personal Earnings for AIAN and NHPI



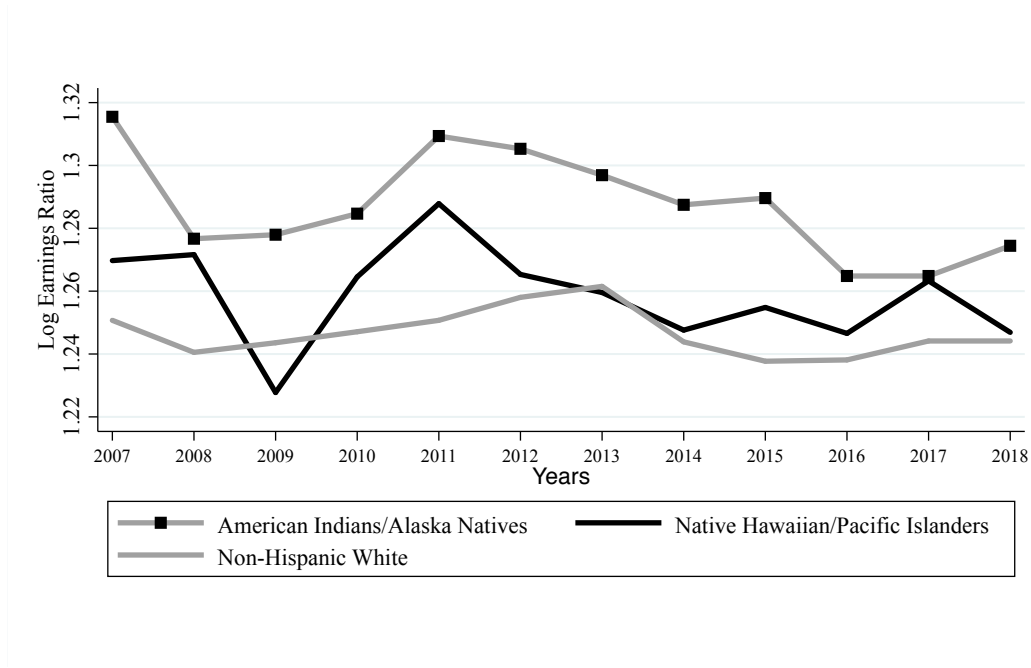
Notes: All dollar values are inflated to 2018 dollars using the Bureau of Labor Statistics CPI-Urban Index for June.

Figure A2: Log 90 / 50 Earnings Ratios for AIAN and NHPI



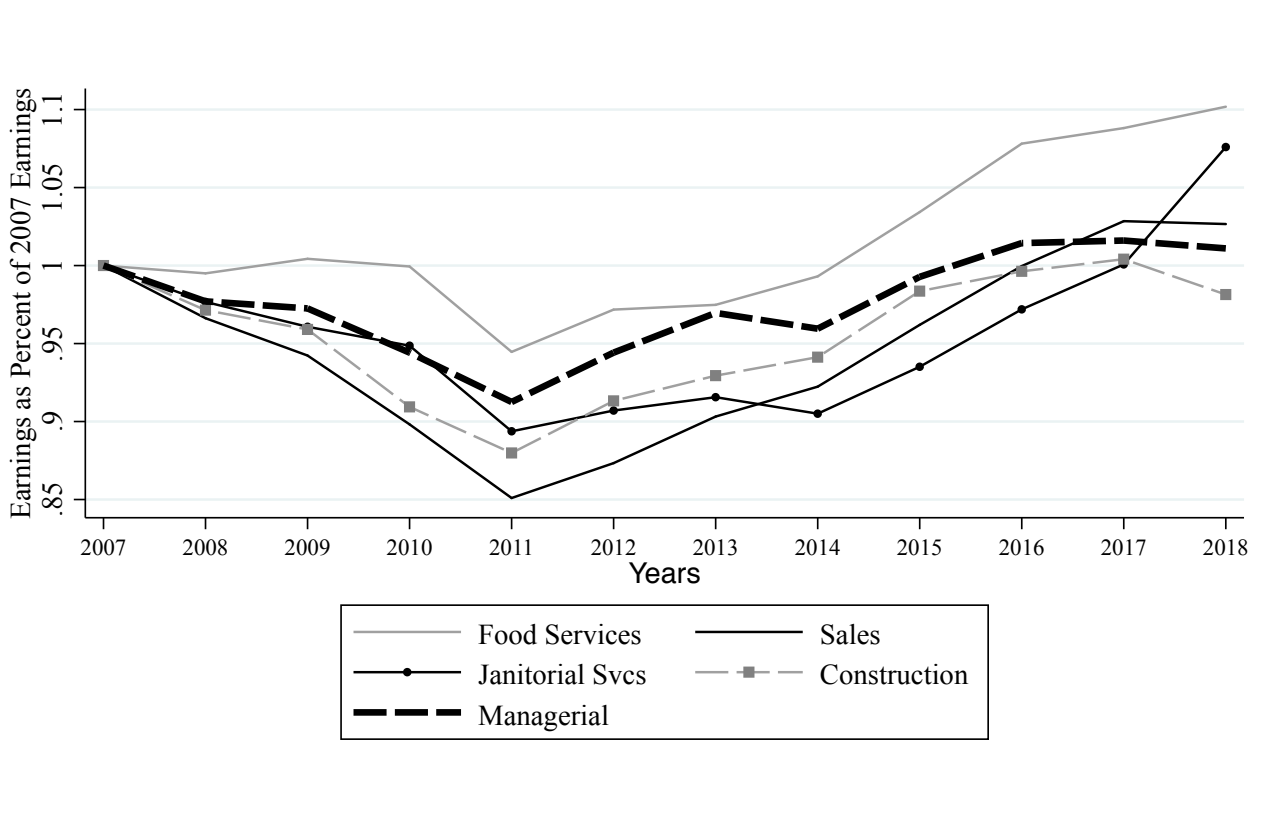
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Figure A3: Log 50 / 10 Earnings Ratios for AIAN and NHPI



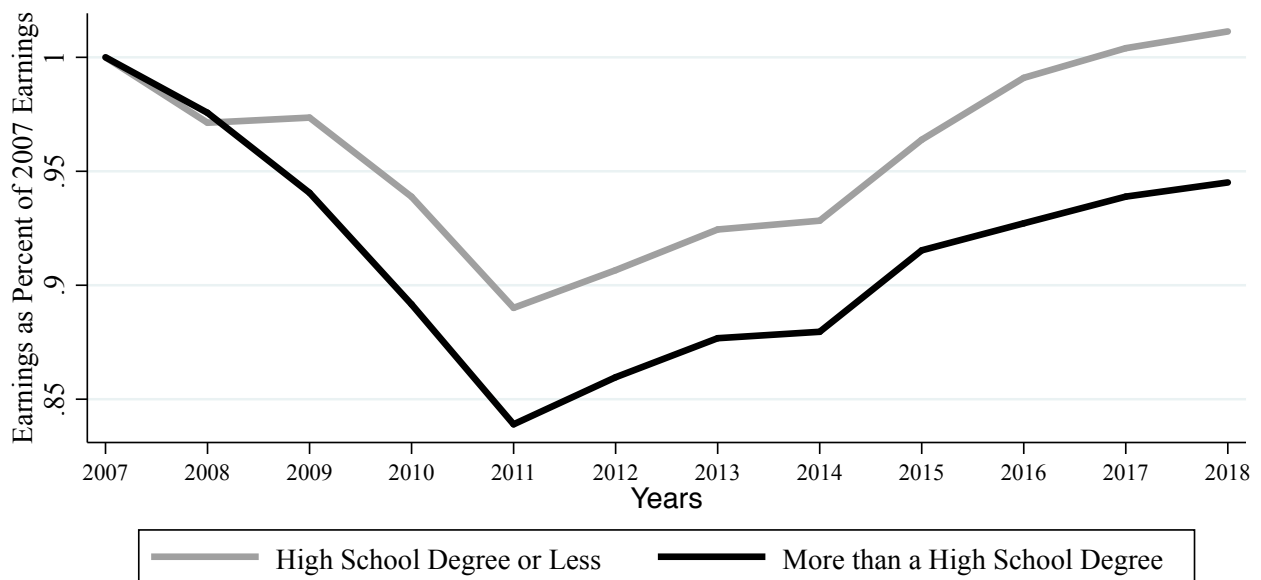
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Figure A4: Total Personal Earnings by Occupational Categories for Non-Hispanic Whites



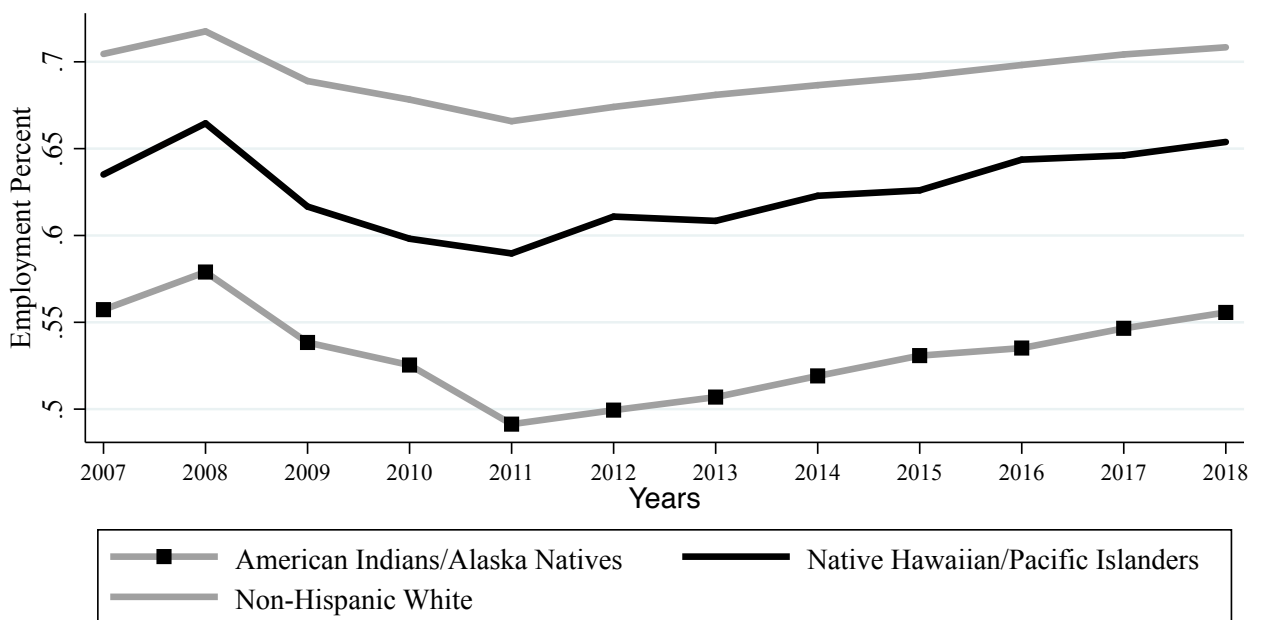
Notes: All dollar values are inflated to 2018 dollars using the Bureau of Labor Statistics CPI-Urban Index for June.

Figure A5: Total Personal Earnings by Educational Attainment for Non-Hispanic Whites



Notes: All dollar values are inflated to 2018 dollars using the Bureau of Labor Statistics CPI-Urban Index for June.

Figure A6: Employment Rate



Notes: All dollar values are inflated to 2018 dollars using the Bureau of Labor Statistics CPI-Urban Index for June.

Table A1: Log Earnings for Selected Percentiles for the AIAN, NHPI and NHW Groups for 2007-2018

	AIAN			NHPI			NHW		
	10th %	50th %	90th %	10th %	50th %	90th %	10th %	50th %	90th %
2007	7.600	9.998	11.03	8.006	10.16	11.12	8.294	10.37	11.40
2008	7.863	10.03	11.03	8.006	10.18	11.11	8.389	10.40	11.40
2009	7.824	9.998	11.08	8.294	10.18	11.15	8.366	10.40	11.41
2010	7.783	9.998	11.08	8.039	10.16	11.15	8.342	10.40	11.41
2011	7.600	9.952	11.03	7.863	10.12	11.15	8.294	10.37	11.41
2012	7.649	9.985	11.08	8.006	10.13	11.15	8.294	10.43	11.47
2013	7.740	10.03	11.11	8.070	10.16	11.22	8.294	10.46	11.51
2014	7.824	10.07	11.12	8.160	10.18	11.22	8.411	10.46	11.51
2015	7.824	10.08	11.18	8.160	10.23	11.26	8.476	10.49	11.51
2016	8.006	10.12	11.21	8.242	10.27	11.28	8.517	10.54	11.56
2017	8.006	10.12	11.22	8.160	10.30	11.35	8.517	10.59	11.60
2018	8.006	10.20	11.23	8.294	10.34	11.39	8.517	10.59	11.63