

Race and class patterns of income inequality during post-recession periods

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Abstract

Recent discussions on increasing income inequality focus on the role that recessions play on overall income distribution and between races in the United States. However, much less is known about the evolution of racial income inequality during post-recession periods—i.e., during upturns of the economy. We hypothesize that differential recovery trends by race and income rank during post-recession periods exacerbate between and within-race income inequality. To test this hypothesis, we examine post-recession trajectories of race-specific weekly-earnings for the poorest and richest 10% in the United States. We apply a linear break spline regression approach to quarterly weekly-earnings data (2001-2018) collected from the Bureau of Labor Statistics and the Federal Reserve Bank of Saint Louis for the 2001 Recession, the Great Recession, and between-recessions periods. Results show that income inequality between the poorest and the richest 10% in the weekly-earnings distribution by race did not shrink during recovery periods. We find that the poorest 10% recovered from recessions slower than the richest 10% across races. We also find that Asian Americans' weekly-earnings trends are key drivers of between- and within-race income inequality during post-recession periods. These findings are critical considering that minority communities and the poor are particularly vulnerable to recessions. Our findings suggest that economically vulnerable racial communities are neither catching up nor recovering during upturns of the economy. Should these trends persist, Blacks and Hispanics will not only continue to comprise an underclass, but also an underclass plagued by higher levels of within-group inequality.

Keywords: Income inequality, Race, Recessions, Recovery, United States

Introduction

Discussions on increasing income inequality tend to focus on the role that recessions play on the overall income distribution in the United States. Recently, the Great Recession differently affected the wealth and income of American families located at the upper and lower tails of the income distribution, arguably shrinking inequality (Meyer & Sullivan, 2017). Much less is known, however, about how recessions affect income inequality within and between racial/ethnic groups located at the opposite ends of the socioeconomic spectrum. Furthermore, recessions are at the center of economic research because they are considered exogenous shocks useful to better understand macroeconomic processes (Griffith-Jones & Ocampo, 2009; Tan, 2012). Yet, recessions tend to be much shorter compared to post-recession periods, which contain an important fraction of the total variation in income inequality. In addition, since post-recession periods are much longer, they encompass the longest periods when families either endure or enjoy the consequences of wealth redistribution depending on where they are located in the socioeconomic ladder. We argue that increasing the study of post-recession periods can provide insights on the development of inequality between and within groups that could not otherwise be detected during recessions.

Post-recession periods are important for a number of reasons. It is during recovery periods that the upturn of the economy can generate structures of opportunity (e.g., better jobs and higher employment income, business entrepreneurship, access to public and private subsidies, unemployment and health insurance, and tax breaks for the lower classes). Such post-recession structures of opportunity bring distributional effects on resources that are reallocated—as opposed to resources that are already allocated, as is the case when structures of opportunity are hardly accessible and deteriorating during recessions. Further, post-recession periods are also

characterized by less uncertainty and higher confidence across markets. That is, because globalized systems are risk-averse (Pastor & Veronesi, 2018), more stable post-recession periods tend to be the ones when accumulation of wealth reaches its peak—especially for those with a comparative investment advantage, thus increasing inequality (McKernan et al., 2013). It is also in these longer, more stable periods that government officials have the political capital to promote policies and programs that more directly favor their lobbies and constituencies (Brulle, 2018), many of which spread across levels of economic power and sociodemographic characteristics.

Given that the U.S. economy is immersed in a business cycle (McKay & Reis, 2016) and that recessions affect the socioeconomic standing of vulnerable communities (Aysa-Lastra & Cachon, 2015), if the benefits of economic upturns are unequally allocated in favor of the wealthiest, then inequality cannot only keep rising but also get entrenched in through political systems. Indeed, a persistent increase in wealth and income inequality has been observed in the U.S. since the 1970s (Piketty & Saez, 2014). The problem has been, therefore, not only the perpetuation of inequality but also the consolidation of poverty and classes of relative disadvantage. In this line of reasoning, we argue that, even though a majority of social classes see their portfolios shrink during recessions, the wealthiest classes are the ones who more strongly and sooner recover during post-recession periods.

Post-recession periods are also informative about income inequality among racial and ethnic groups, who are affected differently due to their dissimilar pre-established economic, political, and social conditions. It is well established in the literature that racial and ethnic groups in the U.S. experience different longstanding cultural and historical contexts that still determine their socioeconomic position (Williams, Grandner & Snipes, 2015; Williams, Priest, &

Anderson, 2016; Bolin & Kurtz, 2017). Different racial/ethnic groups show different income levels, shares, and trajectories, which in turn determine essential aspects of social life like political participation (Simms, Fortuny & Henderson, 2009), health status (Miyawaki, 2013), life satisfaction (Zhang et al., 2017), neighborhood conditions (Hall, Crowder & Spring, 2015), and even how they are treated on a daily basis (Gong, Xu & Takeuchi, 2016). Existing economic resources and the structural factors that distribute them across racial/ethnic groups have been shown to be at the core of racial relations, group identities, and the sociopolitical construction of target populations that thread the fabric of American society (Schneider and Ingram, 1993; Schneider, Ingram & Deleon, 2014).

The main goal of this study is to determine the between- and within-race/ethnicity income inequality trajectories during the recent post-recession periods of the 2001 recession (the so-called burst of the *dot.com bubble*) and the Great Recession. We argue that these trajectories reveal race-specific times needed to recuperate the losses inflicted during recessions. The possible accumulation of economic resources after a recession is a function of the starting time point at which a given racial group begins to increase their income after a recession, and the time that passes before the next recession manifest in the business cycle. Accordingly, a second goal is to analyze the different recovery tendencies for each group, as these tendencies may increase or shrink income inequality within and between different racial groups.

Literature Review

Comparative research addressing income and wealth inequality in Anglo-Saxon countries highlights an increasingly higher concentration of income and wealth among a small branch of the population: the now well-known top 1% or 0.1% (Atkinson et al., 2011). In the United States,

governmental decisions (e.g., through tax policy) impacting the distribution of existing resources have been shown to fluctuate depending on the party in power (Bartels 2005). Yet, inequality in the U.S. is entrenched, and governmental efforts are either slow, ineffective, or sometimes go in the opposite direction (Rodriguez 2018). Not surprisingly, today, some scholars are starting to seriously consider the United States an oligarchic or a plutocratic country (Winters and Page 2009; Pierson 2017), where the 400 wealthiest families and the top 0.1% hold more wealth than the poorest 60% and 80% of U.S. households, respectively (Collins and Hoxie 2017; Saez and Zucman 2019).

Although the bulk of evidence shows a monotonic trend of increasing inequality since the 1970s, little attention has been given to the concentration of economic power among the top income-earners in the context of racial/ethnic inequalities. This lack of research is prevalent even though it is well established that the distribution and access to socioeconomic resources map well into the racial/ethnic makeup of countries like the United States. According to Moffitt and Gottschalk (2012), very little is known about how the income of race-specific low-income earners increase, stagnate, or decrease during economic fluctuations. Although previous research has identified some of the main causes for race-based income inequality in the U.S. (Hurt, Gibbon and Nurse, 2016; Manduca, 2018), to our knowledge no study has addressed income rank trajectories within and between race groups that derive from recession and post-recession dynamics.

An important fraction of inequality research is built over the observation that technological advancement and a globalized-market competition have advantaged the rich to the detriment of the poor (Kanbur and Stiglitz, 2015; Milanovic, 2016). More recently, a series of studies point to the interplay between political forces and economic interests in driving

inequality in the U.S. (Bartels, 2016; Achen and Bartels, 2017). Saez & Zucman (2016) analyze the long-term evolution of income inequality in the U.S. by capitalizing on income tax data and find an increase in U.S. wealth concentration well above international standards—mostly driven by the top 0.1%, whose share of total wealth rose from 7% in 1978 to 22% in 2012. While wealth inequality is more pronounced than income inequality, the pre-tax income for the bottom 50% stagnated between 1980 and 2014 whereas it increased 636% for the top 0.001% in the same period (Alvaredo et al. 2018).

Even though tax policies in the U.S. that benefit the wealthy have steadily moved to the right of the political ideological spectrum (Hacker & Pierson, 2018), they still may have additional differential cumulative effects during downturns or upturns of the economy since their effects on inequality depend on baseline levels of income and wealth. It is well established that tax policy—at least since the Reagan administration—*de jure* disproportionately favors the rich, concedes a modest gain to the middle class, and penalizes the lower class (Landais, Piketty and Saez, 2011). This is because large tax cuts for the wealthy indirectly affect the income and wealth accumulation of the poor (where a larger fraction of racial/ethnic minorities like black people and Hispanics reside) as they translate into massive spending cuts, especially on programs that benefit communities in disadvantage (Hacker & Pierson, 2018).

The resulting asymmetric accumulation of income and wealth between the classes seems to get briefly disrupted during downturns of the economy. Likewise, the wealthy's recovery is sustained and stronger compared to that of the disadvantaged during upturns of the economy (Pfeffer & Schoeni, 2016). For example, as the U.S. entered the post-Great Recession period, inequality increased overall while poverty remained steady (Thompson and Smeeding 2013).

Recent estimates show that, in the aftermath of the Great Recession, 95% of all gained income during the first three years of the recovery period was captured by the top 1% (Saez 2018).

Some other theories have been proposed to explain these inequality trends. One theory states that increasing inequality has its roots in policies implemented during the last decades that gained significant public approval across all income levels. Examining two tax cuts conducted by the Bush administration in 2001 and 2003 that benefitted the wealthiest and penalized the lower classes, Bartels (2005) finds that most Americans (especially those belonging to the penalized lower classes) were surprisingly in favor of the tax cuts. According to Bartels, this lack of opposition was due to public's 'myopia' in connecting inequality with redistributive policies. Misinformation also plays a role in how people perceive policies implemented by governments and how these contribute to widen the gap between rich and poor.

Another theory looks at the turnover of the population as different socioeconomic sectors—with different sociopolitical interests—show different trends of survivability. According to Rodriguez (2018), people participate in politics to influence the politicians that prescribe, execute, and enforce the policies and programs that represent their interests. However, disadvantaged communities like Black people have a large life expectancy comparative disadvantage, thus dying much younger than privileged Whites—e.g., White males with at least 16 years of education live more than 14 years longer than Black males with fewer than 12 years of education (Olshansky et al. 2012). As the haves continue to survive and pushing for policies that secure their socioeconomic standing, the have-nots die off and are therefore excluded from the political arena. Increasing inequality is therefore maintained, as a non-trivial fraction of the individuals that would oppose the policies that put them in disadvantage in the first place, are the ones eliminated at faster rates than the advantaged counterparts that support the policies that

safeguard their socioeconomic-based survivability. This mechanism has shown to be similarly consistent across races/ethnicities in the U.S. (Rodriguez et al. 2015).

Another line of inequality research focuses on intergenerational mobility, showing a correlation between inequality and intergenerational transference of wealth (Corak, 2013; Chetty et al., 2014). The rise of inequality in the past 40 years in the U.S. correlates with a reduction of inter-generational mobility among the poor (Aizer et al., 2014). As inequality increases, parents at the bottom of the income distribution lose their capacity to invest in their children's human capital. These results entail a possible economic long-term weakening of the economic system as a whole as well as spillover effects on other social factors like higher geographical isolation, crime rates, and inter-group antagonism (Krive et al, 2013; Daly, 2017; Killen et al., 2016). Thus, inequality directly and indirectly thwarts the poorer classes' effort to attain the necessary education that would allow them to improve their socioeconomic standing relative to that of their parents (Alesina & La Ferrara, 2005).

Some recent research studies have looked at income inequality between races and their implications. Kochar & Cilluffo (2016) report that Asian Americans are, overall, the racial/ethnic group with the highest income across the races/ethnicities; yet, inequality within Asian Americans have also increased compared to its level in 1970. Differently, between 1970 and 2016, within-race/ethnicity inequality is shown to be the lowest among Blacks and Hispanics (Noël, 2018)—the two groups (with Native Americans) that have seen fewer of their members belong to the upper classes—suggesting that for Blacks and Hispanics the improvement in social status across generations has been slower.

These between- and within-group inequalities, linked to the lack of opportunities for the poor to climb the social ladder, seems to be related to the widening gap between- and within-

racial/ethnic groups in times of recession. For instance, after the burst of the *dot.com bubble*, in 2004, households in the top 10% of the wealth distribution were 73 times wealthier than those at the bottom 25%—compared to the year 2000, when the top 10% was 45 times wealthier than the bottom 25% (Wolff, 2011; Jenkins et al., 2012). Likewise, after the burst of the *dot.com bubble* Whites were on average six times wealthier than non-Whites (Scholz & Levine, 2004). Although the burst of the *dot.com bubble* was not as aggressive as the Great Recession, these statistics suggest differential recession effects by race and race-specific post-recession recovery trends, independent from the intensity of the recession. Indeed, a descriptive analysis by Kochhar and Fry (2014) reported heterogeneous White-Black and White-Hispanic wealth ratios during the Great Recession and between 2010 and 2013 during the post-recession period.

However, research has not always reported homogeneous recession inequality effects. Bricker et al. (2017) reports that, in absolute terms, the wealthiest families across races/ethnicities experienced the largest losses during the Great Recession whereas, in relative terms, the most disadvantaged households suffered the greatest decline. This distinction between absolute and relative recession effects is relevant because, when comparing the rich to the poor in relative terms, the gap between them may not shrink despite bigger absolute losses are detected for the rich. Comparisons in relative terms may also vary depending on the centile groups under observation. For instance, the Great Recession produced large wealth declines among families at the bottom 30%, and even larger among families at the bottom 10% (Kennickell, 2017). The analysis gains complexity as the bulk of research overemphasizes relative and absolute changes in resource distribution during recessions. Yet, as the racial/ethnic composition varies—many times drastically—across deciles of the wealth and income

distributions, there is the need to better understand how the rates of recovery vary across racial/ethnic groups during post-recession periods.

Data and Methods

Our underlying dependent variable is median weekly earnings for each quarter adjusted for inflation, which we also use to generate within- and between-race differences in earnings and growth measures. The earnings data are from the Bureau of Labor Statistics, covering the period between the first quarter (Q1) of 2001 and the third quarter (Q3) of 2018 (71 quarters)—the available data series at the moment of analysis. The data are for the richest and poorest 10% in the median weekly earnings distribution of Hispanics, non-Hispanic Blacks, non-Hispanic Asian Americans, and non-Hispanic Whites in the United States, respectively. We use the National Bureau of Economic Research (NBER) business cycle durations; accordingly, the early-2000s recession period ranges from Q1 of 2001 through Q4 of 2001 (four quarters) and for the Great Recession from Q4 of 2007 through Q2 of 2009 (seven quarters). We use these data to address the three main objectives of this study, which are to analyze and quantify (1) how have between- and within-race inequalities evolved during the study period, (2) how have race-specific inequalities evolved during post-recession periods, and (3) the differential effects of the recessions on weekly earnings by race and income rank.

We use a break-spline approach to identify the change in patterns of weekly earnings by income rank (top or bottom 10%) and race/ethnicity in post-recession periods. Linear break-splines are commonly used in the literature to analyze structural breaks (Marsh & Cormier, 2002; Almond et al., 2004; Tapias & Rodriguez, 2014). This approach allows us to test the null hypothesis that there is not a trend break during post-recession periods for each race-income

subgroup. Accordingly, we can crudely estimate how much time it takes for different race-income groups to start recovering after the *dot.com* recession and after the Great Recession. We can also analyze patterns of income inequality within and between races/ethnicities and describe their commonalities and differences. Our estimates are informative under the premise that, the longer the time the different race-income groups have to wait to see their weekly earnings start increasing, the less time they have to recuperate their recession losses until the next recession arrives—thus impacting inequality. Given the nature of our analysis, we also analyze two periods: (1) the *dot.com* post-recession period—observed between Q1 of 2002 and Q3 of 2007 (23 quarters), and (2) the Great Recession post-recession period—observed between Q3 of 2009 and Q3 of 2018 (36 quarters).

We run our models separately for each of the two recessions as well as for race, income, and race-income groups. Our post-recession break spline model specification is of the following form:

$$Y_t = \alpha + \beta_1 Q_t + \beta_2 (Q_t - b) I_b + \varepsilon_t \quad (1)$$

where Y_t is the weekly earnings indicator in quarter t , Q_t is the post-recession linear trend, and ε_t is the regression error term. The term b stands for the quarter-specific break; I_b is a dummy indicator equal to “1” if $Q_t - b > 0$, or “0” otherwise. Accordingly, the term $(Q_t - b) I_b$ represents the linear specification that breaks at b the post-recession period Q_t into two periods: the pre- and post- b periods. With this specification, β_1 is the trend slope before the quarter break point b whereas the coefficient β_2 is the slope change of Y_t from the pre- to the post- b period. If β_2 is small and non-statistically significant, it would suggest that there was no significant trend

change in weekly earnings in the post-recession period. $\beta_1 + \beta_2$ represents the trend slope after the quarter break point b .

We are mainly interested in identifying the quarter break point b at which β_2 would be large, statistically differentiable from zero, and retrieves the best possible model fitting (i.e., the highest R^2 statistic). To do this, we implement all possible break points b for each post-recession period with a minimum of five quarters at the beginning and at the end of the post-recession period. This exercise allows us to identify the sharpest change—if any—in weekly earnings trends during post-recession periods. Equation 1 is estimated using OLS estimation, and the standard errors are estimated using the Huber-White’s robust standard errors approach, which is robust to arbitrary forms of heteroskedasticity.

Results

Table 1 lists the descriptive statistics (in 2018 U.S. dollars) for each of the recession and post-recession periods by race/ethnicity and income rank (Table 1A in the appendix lists our best-fitting linear break estimation parameters). Overall, for the top 10%, weekly earnings varied from an average low of \$1,267 (Hispanics) and a high \$2,093 (Asians) during the *dot.com* recession to \$1,451 (Hispanics) and \$2,406 (Asians) in the post-Great Recession period. For the bottom 10%, weekly earnings varied from a low \$343 (Hispanics) and a high \$419 (Asians) during the *dot.com* recession to \$349 and \$422 during the post-Great Recession period, respectively. One feature of the data is that non-Hispanic Asian Americans and non-Hispanic Whites seem to comprise a group different from non-Hispanic Blacks and Hispanics. This feature is depicted in Figure 1, which shows the weekly earnings trends for the “poor” (bottom 10%, Figure 1a) and the “rich” (top 10%, Figure 1b) by race between 2001 and 2018.

[Table 1 and Figure 1 about here]

In both panels of Figure 1, non-Hispanic Asian Americans depict the highest weekly earnings among both the poor and the rich, closely followed by non-Hispanic Whites and, more distantly, by non-Hispanic Blacks and Hispanics. Among the top 10%, the Great Recession contracted the overall range in the weekly earnings across races/ethnicities (i.e., between Asian Americans and Blacks/Hispanics) (Figure 1b). Differently, the weekly earnings range contracted for the poor and expanded for the rich during the post-Great Recession (hereafter post-GR) period (Figure 1). There seems to be convergence of weekly earnings during the post-*dot.com* and the post-GR periods for Blacks and Hispanics among the poor and the rich. During both post-recession periods, however, the gap between Asian Americans and all other races/ethnicities tended to increase for poor and rich. Figure 1 also shows that during the study period, weekly earnings for the poor manifest high volatility (increasing and decreasing across races/ethnicities) whereas for the rich are more stable without big drops. Large declines in weekly earnings are typically detected for the poor not during recessions but during post-recession periods.

Figure 2 shows the post-recessions best-fitting weekly earnings linear trend breaks by race/ethnicity and income rank—poor in the left panel, rich in the right. The two post-recession trend patterns differ from each other, especially among the rich (Figure 2b). In the post-*dot.com* period, no racial/ethnic group among the rich got negatively affected, with mostly stable or modest increases for Whites, Blacks, and Hispanics. Differently, weekly earnings for rich Asian Americans increased from the start of the post-*dot.com* period until almost the end, where a sharp yet short decline is observed. During the post-GR period, a very similar pattern of modest,

almost-constant increase is observed for rich Blacks. A sharp 7-quarters initial decline is detected for rich Hispanics with a moderate increase afterward. Post-GR trends of modest increases for rich Blacks and Hispanics resemble and continue those from the post-*dot.com* period. Rich Whites, however, show a 19-quarters weekly earnings stagnation during the post-GR period, followed by a medium-size 17-quarters recuperation. A modest 8-quarters decline is detected for rich Asian Americans, followed by a 28-quarters robust increase in their weekly earnings.

[Figure 2 here]

A different depiction arises among the poor. Figure 2a shows that during both post-recession periods, there is an overall decline tendency among poor of all races/ethnicities, with the only exception of poor Asian Americans during the post-*dot.com* period, who show initial stagnation followed by a sharp increase of their weekly earnings. In the post-*dot.com* period, all races/ethnicities (with the exception of Asian Americans) finished with median weekly earnings values lower than those at the beginning of the post-*dot.com* period. Overall, of the 23 quarters of the post-*dot.com* period, weekly earnings either stagnated or declined for about 70% of the post-*dot.com* period. During the post-GR period, poor of all races/ethnicities show initial declines followed by sharp increases. Initial post-GR small declines or stagnation lasted 19 quarters for poor Whites and 15 quarters for poor Hispanics whereas sharp declines lasted 13 quarters for poor Asian Americans and 15 for poor Blacks. In relative terms, declines for the rich were smaller than those of the poor. The periods of strong decline were, on average, within- and between-races/ethnicities much longer for the poor than for the rich.

Figure 3 shows the trends of the share of overall weekly earnings held by the rich and the poor for recession and post-recession periods—i.e., how much of the rich-and-poor combined earnings is held by the rich and the poor, respectively. The trends show that the rich are consistently increasing and the poor consistently decreasing their comparative share of weekly earnings. The gap in the overall share of weekly earnings between the top and bottom 10% increased from 62.4 to 65.8 percentage points, for a total change of 3.4 percentage points in the study period. The rich-poor share gap was 62.4 percentage points during the *dot.com* recession and 64.3 percentage points during the Great Recession. Differently, the share gap was 63.8 percentage points during the post-*dot.com* period and 65.8 percentage points during the post-GR period, showing that inequality patterns induced during recessions exacerbate during post-recession periods.

[Figure 3]

Figure 4 shows the trends of share of total weekly earnings by income rank and race—i.e., how much of the earnings held by rich and poor, respectively, is held by each of the races/ethnicities. The weekly earning shares among the poor show Asian Americans followed by Whites, Blacks, and Hispanics, their shares are relatively stable across time and somewhat similar in size (i.e., they are similarly poor, with all shares somewhere around 25%) (Figure 4a). This is not the case among the rich. For example, whereas the gap in the earning shares between Asian Americans and Hispanics among the poor is about 5 percentage points, it is about 12 percentage points among the rich (Figure 4b). Among the rich, compared to their respective recession values, shares in post-recession periods show to be either very similar or to decline for

all races/ethnicities—with the exception of Asian Americans. Rich Whites are slowly losing ground across time, with an overall decline of about 1 percentage point during the study period. An important pattern is that rich Asian Americans are driving between-race inequality dynamics; they hold almost one-third of median weekly earnings and, different from all other races, their share clearly increases during post-recession periods.

[Figure 4 here]

On the left panel, Figure 5 shows the within-race growth of inequality—i.e., for each race, the growth in the top-bottom 10% gap of weekly earnings (relative to their top-bottom 10% gap value in 2001). The growth in the within-race rich-poor gap increased monotonically for Blacks and Hispanics during the study period. Differently, the growth of inequality increased among Whites, stagnating during the first 25 quarters of the post-GR period and growing back afterward. Fluctuations are much more pronounced among Asian Americans. Levels of inequality among them are currently the highest among all races, with drastic increases during both post-recession periods, yet stagnating right before and during the Great Recession. Within-race levels of inequality were similar by the end of the Great Recession; within-race inequality trends broke apart during the post-GR period, with Asian Americans reaching a level about 30% higher than what it was in 2001.

[Figure 5 here]

The right panel of Figure 5 shows, for each race/ethnicity, the trend of the within-race top-bottom 10% gap relative to Whites' gap at each point in time (Figure 5b). This figure illustrates how income inequality has been mostly driven by fluctuations in the income distribution among Asian Americans. Fixing the trend for within-Whites' inequality, within-race inequality trends are very stable for Blacks and Hispanics during the study period. By 2017-2018, the inequality among Asian Americans was more than 20% higher than the inequality among Whites. There are also trends of periodic increasing and decreasing inequality for Asian Americans relative to Whites, in which it contracts during recession periods (10-15% higher than Whites) and expands during post-recession ones (20-25% higher than Whites). No clear periodic fluctuations of relative inequality are detected for Blacks or Hispanics.

Discussion

Most inequality research focuses on how recessions differentially affect the overall income and wealth distribution across sectors of the socioeconomic ladder (Pfeffer et al. 2013). Departing from, yet complementing, this approach, this study shows that the distribution of resources during post-recession periods—i.e., in the upturns of the economy—manifest drastic, long-term effects for the population in general, and more specifically across racial/ethnic groups. Our findings are also consistent with recent descriptive analyses that indicate notable post-recession differential income trends between the races/ethnicities in the U.S. (Hoynes et al. 2012; Wolff 2018; Kochhar & Fry, 2014).

Our findings confirm that the impact of the Great Recession was mostly felt among racial/ethnic minorities like Blacks and Hispanics (Hoynes et al. 2012; Wolff 2018; Kochhar & Fry, 2014). Our findings are also in tandem with research showing that GDP growth may once

had been related with economic prosperity for the majority of Americans, but over the past several decades, many Americans have been left behind amid long-term economic expansions (Clemens, 2019). During the last decades, the income of the majority of Americans have grown below overall GDP growth (Clemens, 2019) and lagged further behind the favorable increases in productivity (Bivens et al., 2014). As a larger number of Americans increasingly rely on their paychecks to make ends meet, for these families, wages and employer-provided benefits are increasingly comprising the bulk of their incomes (Bivens et al., 2014). Our findings suggest that these patterns follow drastic weekly earnings differences between income ranks across the races, and that differences in these trends exacerbate particularly during post-recession periods.

The income trajectories of individuals at the top and bottom 10% of the weekly earnings distributions are a function of the different concentrations of racial/ethnic groups across the socioeconomic spectrum, especially considering that race/ethnicity intersect with socioeconomic status in the U.S. (Rodriguez et al. 2019). The effects of institutional racial discrimination in the workplace necessarily spill over the distribution of job opportunities, work benefits, and the promotions that ultimately determine earnings. Macroeconomic policy—including employment, wages and compensation policies—attempting to ameliorate the detrimental effects of a surge in unemployment during recessions should go hand-in-hand with transitional strategies for larger and stronger post-recession effects. Our findings suggest these policies should also incorporate protective mechanisms facilitating the supervision, monitoring, and identification of the negative spillover effects that stratify economics into race.

According to our results, weekly earnings of Asian Americans is a key driver of inequality between the races, and most of these effects are particular to post-recession periods. However, as the adage says, not all recessions are created equal. In particular, rich Asian

Americans show powerful relative weekly earnings gains—compared to other races/ethnicities—after the Great Recession. Yet, during the post-*dot.com* period, poor Asian Americans were the only ones without weekly earnings losses. Even non-Hispanic Whites—the group that has been historically considered the dominant group in the U.S. socioeconomic ladder—showed signs of stagnation in their weekly earnings and are losing ground to Asian Americans.

Far from making equity a zero-sum competition between the races, the trends of Asian American's earnings should be informative to policies aiming at simultaneously increasing the earnings of the population while achieving convergence among the races. That weekly earnings of both rich and poor Asian Americans favor from post-recession macroeconomic conditions insinuates that rich-poor favorable trends are not mutually exclusive. They also manifest that there are sectors of the minority population—rich and poor—resistant to the conditions that exacerbate within-group income inequality at the sole expense of unfavorable conditions of the poor. Although inequality among Asian Americans increased during the study period, Asian Americans represent a unique group for analysis that future inequality research should incorporate to inform the alleviation of poverty, social stratification and segregation, and the economic progress of all.

On the other hand, the status of disadvantage of non-Hispanic Blacks and Hispanics showed to be entrenched. These two groups are the poorest among the rich and the poorest among the poor. Our findings also show little significant movement in their weekly earnings relative to other races/ethnicities, with within-race inequality consistently increasing among them. Should these trends persist, Blacks and Hispanics will not only continue to comprise an underclass, but also an underclass plagued by higher levels on within-group inequality. With a non-trivial sector of the U.S. population stably anchored to relatively low weekly earnings,

overall inequality is doomed to continue to increase during periods of economic contraction and expansion.

Our findings supported our hypothesis that, compared to the rich, weekly earnings among the poor take longer times to increase during post-recession periods. While weekly earnings among the poor tend to either stagnate or decrease right after a recession, this is not the case for the rich. In addition to their state of economic disadvantage, the poor do not have enough time to recover the losses from a preceding recession. In contrast, losses among the rich during post-recession periods are relatively small and, overall, their weekly earnings tend to increase for most of the post-recession period. This situation leads to two contrasting social experiences: The persistent struggle of losses while being poor *vis-à-vis* the incessant comfort of accumulation while being rich. Under such circumstances, the accumulation of wealth and poverty—including during periods of economic expansions—does not only rupture the fibers of our social fabric but has spillover effects over other sectors of population well-being.

This situation has at least two additional implications. First, as inequality continues to increase, its detrimental effects on key aspects of life like health, social capital, political representation, and overall well-being need to be incorporated into macroeconomic policy, and *vice versa*. Policy prescriptions to ameliorate income and wealth inequality should not be addressed on a one-by-one basis but under a framework that accounts for complex systems. Second, policy makers, researchers, and advocates should come to the realization that as far as these patterns of inequality persist, the United States is being led toward at least two, or multiple, United States in terms of socioeconomic stratification on the basis of race/ethnicity. And, as far as inequality is being nourished in both contractions and expansions of the economy, the

detrimental racial socioeconomic divide that has characterized the U.S. throughout its history is only destined to increase.

There are some limitations worth mentioning. Given that inequality has been driven by the very top earners in the income distribution, by using the 90th percentile, instead of the 99th or 99.9th percentile in the weekly earnings distribution, our estimates represent an underestimation of inequality trends during post-recession periods. Unfortunately, the data reported by the BLS do not include indicators at that level of granularity. Yet, it is worth mentioning that top-to-bottom 10% gaps and ratios are standard in the literature, as they inform trends of inequality among much larger sectors of the population. To analyze inequality for these top and bottom deciles of the earnings distribution is also important as public policy is mostly implemented, and more likely to pass on legislatures' floor, as it affects larger fractions of the population. Another shortcoming of the BLS data is that, as it is customary with many income indicators, it excludes people with zero-earnings. This limitation derives from typically low response rates in surveys among people with no income—i.e., those who are usually homeless or institutionalized individuals. The exclusion of individuals at the very bottom of the income distribution also produces an underestimation of inequality trends in the population. Interpretation of our results therefore need to be done with caution as they do not represent the living standards and the post-recession trends of the poorest members of society.

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Appendix

Tables

Table 1. Summary Statistics of Weekly Earnings, 2001 – 2018

Weekly Earnings					
Bottom 10%			Top 10%		
<u>Dot.com Bubble</u>	<u>Mean</u>	<u>SD</u>	<u>Dot.com Bubble</u>	<u>Mean</u>	<u>SD</u>
Asian Americans	419	11	Asian Americans	2093	58
Whites	408	7	Whites	1903	18
Hispanics	343	6	Hispanics	1267	41
Blacks	368	9	Blacks	1378	53
<u>Post Dot.com Bubble</u>			<u>Post Dot.com Bubble</u>		
Asian Americans	416	11	Asian Americans	2238	70
Whites	402	7	Whites	1935	27
Hispanics	344	6	Hispanics	1302	41
Blacks	364	9	Blacks	1420	37
<u>Great Recession</u>			<u>Great Recession</u>		
Asian Americans	422	16	Asian Americans	2207	66
Whites	405	7	Whites	1988	53
Hispanics	341	6	Hispanics	1371	37
Blacks	358	7	Blacks	1439	27
<u>Post Great Recession</u>			<u>Post Great Recession</u>		
Asian Americans	422	17	Asian Americans	2406	149
Whites	407	12	Whites	2053	58
Hispanics	349	18	Hispanics	1451	56
Blacks	358	12	Blacks	1531	54

Note: Figures are in 2018 dollars.

Table 2 (a-d). Best-fitting Linear Break Estimation Parameters for Weekly Earnings

Post Dot.com Bubble - Bottom 10%				
	Asian Americans	Whites	Hispanics	Blacks
Weekly Earnings				
Time (Quarter)	0.23 (0.62)	-0.93*** (0.22)	1.50*** (0.47)	-1.22*** (0.33)
Line Break	1.7 (0.62)	1.53 (1.18)	-2.14*** (0.57)	2.53** (1.03)
R-Squared	0.26	0.44	0.28	0.48
Break Quarter	14	19	8	18

Post Dot.com Bubble - Top 10%				
	Asian Americans	Whites	Hispanics	Blacks
Weekly Earnings				
Time (Quarter)	8.72*** (2.47)	-0.68 (0.97)	2.19 (1.52)	6.00 (4.98)
Line Break	-30.22*** (10.08)	9.31 (5.69)	11.89 (8.87)	-5.28 (5.84)
R-Squared	0.44	0.09	0.37	0.18
Break Quarter	19	19	19	8

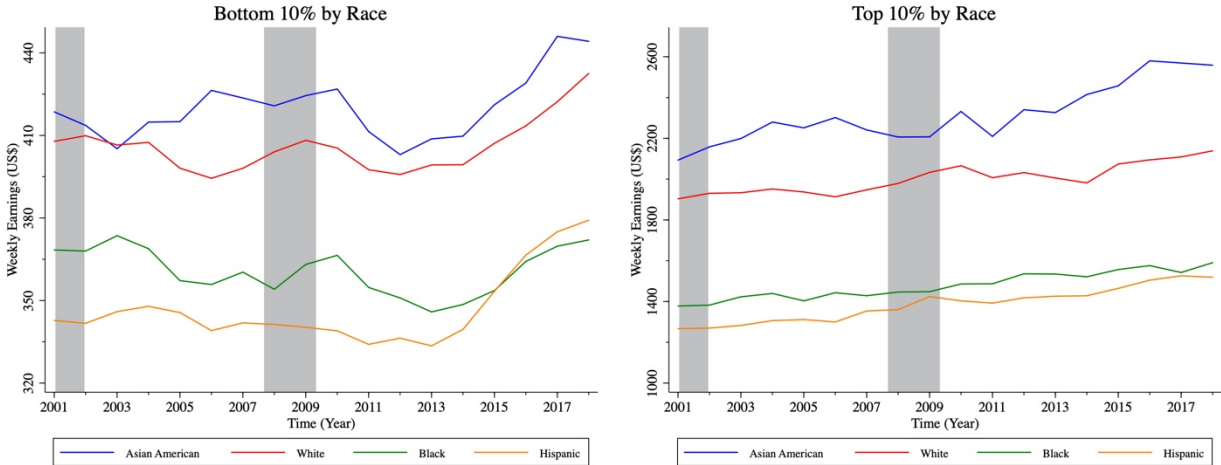
Post Great Recession - Bottom 10%				
	Asian Americans	Whites	Hispanics	Blacks
Weekly Earnings				
Time (Quarter)	-2.38*** (0.36)	-0.46** (0.19)	-0.46** (0.20)	-1.56*** (0.29)
Line Break	4.55*** (0.62)	2.70*** (0.31)	3.17*** (0.37)	3.18*** (0.44)
R-Squared	0.71	0.85	0.87	0.57
Break Quarter	14	20	17	17

Post Great Recession - Top 10%				
	Asian Americans	Whites	Hispanics	Blacks
Weekly Earnings				
Time (Quarter)	-4.66 (7.77)	-2.92** (1.35)	-11.42*** (3.42)	6.50*** (2.34)
Line Break	17.63*** (8.83)	11.69*** (2.09)	16.68*** (3.82)	-4.66 (3.26)
R-Squared	0.68	0.60	0.71	0.43
Break Quarter	8	19	7	13

Note: Robust standard error in parentheses, statistical significant code (*p< 0.1, ** p<0.05, *** p<0.01)

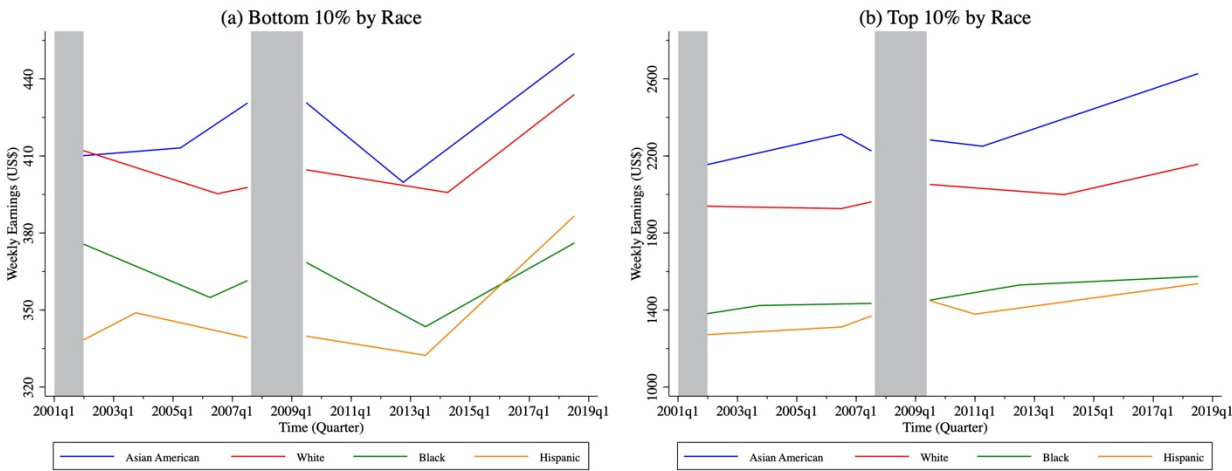
Figures

Figure 1. Average Annual Weekly Earnings for Top and Bottom 10% by Race, 2001-2018



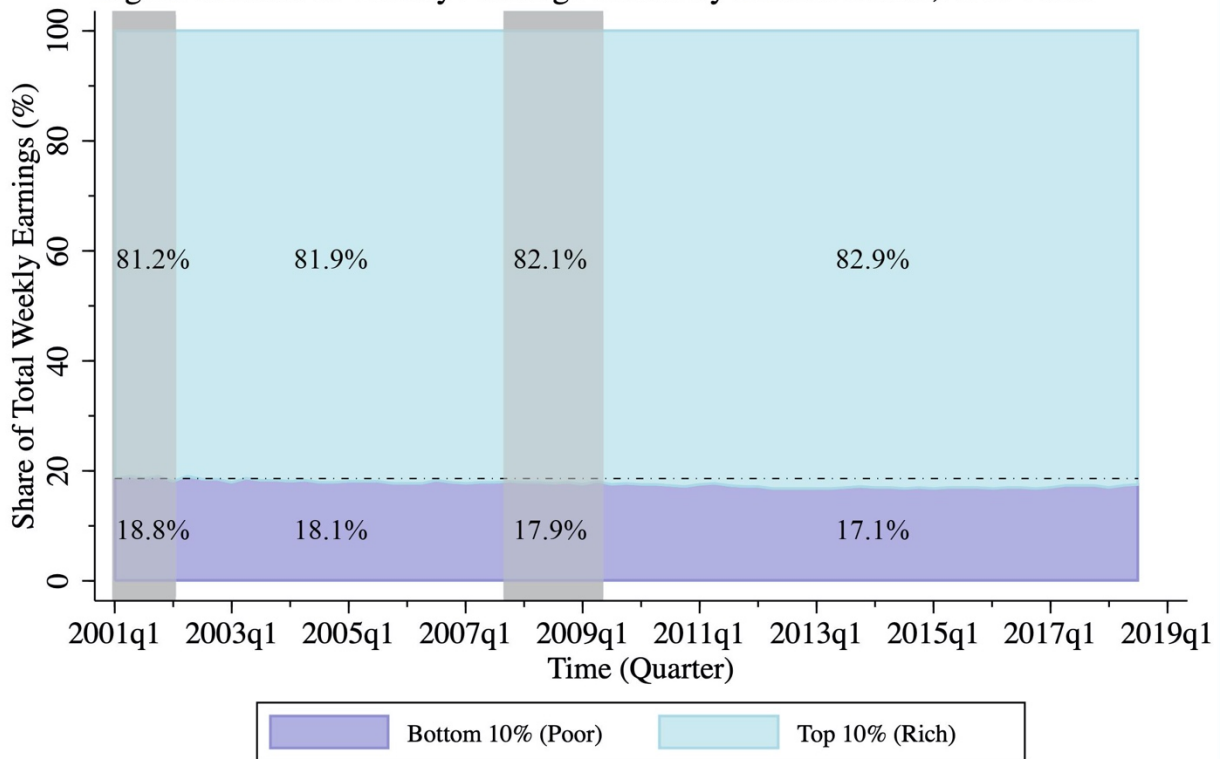
Note: All dollar amount is in 2018 value. The shaded areas are recession periods.

Figure 2. Post-recession Weekly Earnings Quarterly Trends for Top and Bottom 10% by Race, 2001-2018



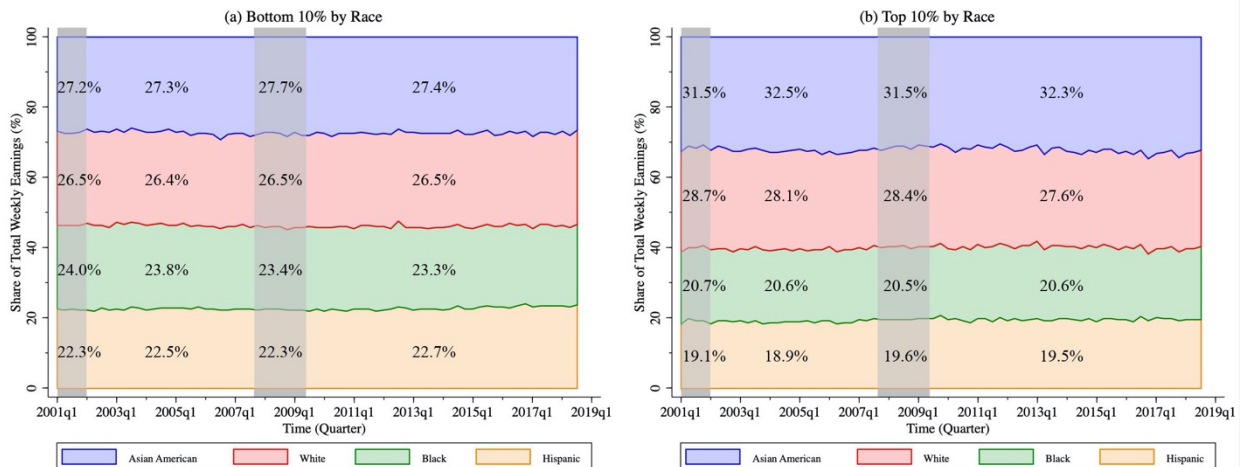
Note: All dollar amount is in 2018 value. The shaded areas are recession periods.

Figure 3. Share of Weekly Earnings Trends by Income Status, 2001-2018



Note: The shaded areas are recession periods.

Figure 4. Between-race Share of Weekly Earnings Trends for Top and Bottom 10%, 2001-2018



Note: The shaded areas are recession periods.