

Are American Women more deprived than Men?

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Abstract

American men experience higher premature mortality than women, while women are poorer. These gender inequalities are substantially different across racial groups. Based on these facts, I explore in this paper two complementary questions. First, what is the most disadvantaged gender group when combining poverty and mortality data? Second, are there racial disparities in the pattern of gender inequalities in total deprivation? This study uses the generated deprivation index, a novel indicator that aggregates poverty and mortality as components of total deprivation, to answer those questions. Two main conclusions emerge from the analysis. First, since the 1990s, men and women have been experiencing very similar total deprivation rates, whereas, before then, men were more deprived than women. The reduction of the gender gap in mortality combined with the lack of significant progress in the gender inequality in income poverty resulted in a steeper decline in total deprivation among men. Second, this near gender equality in total deprivation hides sizable disparities across races. The gender gap against women is higher for Hispanics and Blacks compared to Whites Non-Hispanics. This finding suggests that women in Minorities face more severe racial penalties than men.

JEL Classification: *I32, J16, O51*

Keywords: *Poverty, Mortality, Gender, Total Deprivation, USA*

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1 Introduction

It is recognized worldwide that poverty and mortality rates are different across genders. Women have a lower income level and are 22% more likely to fall into extreme poverty than men (UN_Women, 2018). They are, however, at an advantage regarding life expectancy: recent data from the United Nations (2018) indicate that the global life expectancies at birth are 75.6 and 70.8 years for women and men, respectively. In the United States, the same pattern is observed. In 2017, for example, US women had a life expectancy of 5 years longer than men (Arias & Xu, 2019)¹ and, at all ages above 18, they were more likely to be poor (US Census Bureau, 2019²). This general picture hides important racial disparities in terms of the size of gender differences. For instance, the income poverty gender gap is the highest among Whites Non-Hispanics (majority group), while the largest gender difference in premature mortality is found in Minorities³ (see Snipp & Cheung, 2016 for poverty and Arias & Xu, 2019 for mortality). Taken together, the mortality and poverty data in the US lead to unclear conclusions about the most disadvantaged gender group, on the one hand and the most (gender) unequal racial group on the other hand.

Existing research looks at economic poverty and mortality separately. Yet, it is recognized that comparing deprivation between groups with a distinct focus on mortality or poverty raises the possibility of a mortality paradox, which occurs when the higher mortality among poor people artificially leads to a reduction of poverty. Moving on to comparisons between groups, the effect of poverty masking premature mortality becomes more concerning when one group is better off in one dimension and worse off in another. This is especially the case of gender differences as shown earlier. The low poverty rate among men might be a consequence of their high mortality rate since, in the US, poor men are more likely to die prematurely than poor women (Chetty et al., 2016). From this perspective, gender differences in deprivation based solely on the poverty of the living population may contain serious biases. A possible solution would be to aggregate mortality and poverty into a single indicator in order to make accurate comparisons between groups and over time.

Empirical studies that combine mortality and income poverty remain scarce in the US. To the best of my knowledge, the existing research close to this subject has only shown that mortality has been the highest in areas with high poverty and inequality (Chetty et al., 2016; Currie & Schwandt, 2016, Geronimus et al., 2011; McDonough et al., 1997; Ross et al., 2000). Therefore, the general objective of this paper is to draw a picture of the gender difference

¹The life expectancy at birth was 81 and 76 years for women and men, respectively

²<https://www.statista.com/statistics/233154/us-poverty-rate-by-gender/>

³In the USA, racial and ethnic groups other than Whites non-Hispanics (Hispanics, Blacks, Asians, Indians, and Native Hawaiians) are classified as minorities (US Census Bureau, 2019)

in overall deprivation in the United States. The existence and persistence of large gender disparities in poverty and mortality make the US an interesting case study (see [Iceland, 2006](#) for poverty and [Case & Deaton, 2017](#) for mortality). Furthermore, I also explore the racial disparities in the overall deprivation gender gap. In fact, the pattern of gender difference in poverty and mortality differs considerably between the Majority (Whites Non-Hispanics, Whites NH) and Minority groups in the US ⁴ ([Snipp & Cheung, 2016](#) and [Meara et al., 2008](#))⁵.

Several measures that aggregate poverty and mortality have been proposed in the economic literature. The first and most common is the Human Development Index, a composite index that aggregates alive and lifespan deprivations using arbitrary weights. As discussed in [Baland et al. \(2021\)](#), this index does not hold a constant trade-off between poverty and premature mortality leading to inconsistent comparisons across groups and over time. The second family of measures assumes an inter-temporal utility function to aggregate quantity and quality of life. The main challenge of this approach is the definition of the inter-temporal utility function since it needs to be unique across time and space⁶ ([Grimm & Harttgen, 2008](#)). The third approach takes into account the mortality paradox by attributing fictitious incomes to prematurely dead individuals to compute an adjusted poverty rate ([Lefebvre et al., 2013](#) and [Lefebvre et al., 2019](#)). The underlying assumption in the determination of these fictitious incomes is crucial for the validity of the measures. In this study, I use the Generated Deprivation Index (GDI), recently developed by [Baland et al. \(2021\)](#). The choice of GDI is dictated by its theoretical and practical advantages over other indices. The intuition behind the GDI is to avoid the mortality paradox by considering premature death as deprivation in itself⁷. The GDI respects the separability property⁸, and it aggregates poverty and mortality without relying on a particular representation of the preferences. The GDI is also easy to interpret and requires less data, which makes it more practical ([Baland et al., 2021](#)).

The Generated Deprivation Index (GDI) aggregates the number of poor and the number of person-years prematurely lost, both measured in time units. A dead person is considered as lifespan deprived if he dies before a certain age threshold assumed to be the minimal lifespan in a given society. At each age, the number of person-years lost is computed by the difference between the age line and the age at death. The total number of person-years lost in the society (PYL) is the sum of person-years lost at each age. With information on premature death (PYL) and the number of poor (alive deprivation), the GDI is calculated by

⁴The income gender gap is the highest among Whites Non-Hispanics (majority group) and lowest among Minorities ([Snipp & Cheung, 2016](#)) while the women’s relative advantage in life expectancy is the largest in the group of Blacks ([Meara et al., 2008](#)).

⁵Note that this paper explores the gender differences in outcomes and not in opportunities.

⁶This particularity limits the consensual implementation of these indices from a practical point of view.

⁷It does not require the allocation of hypothetical fictitious income as in [Lefebvre et al. \(2019\)](#)

⁸The GDI provides a constant trade-off between premature mortality and poverty

summing the prevalence of these two components in the same reference population using a weight that expresses the relative importance of premature death versus Alive Deprivation. The reference population is the sum of the poor, the non-poor, and the total number of person-years lost prematurely in the society in a given year. The estimations in this study are based on a restrictive assumption that being alive deprived is as bad as being prematurely dead (weight=1), and the minimum lifespan is 75 years. In addition, in this paper, we define the poor as individuals whose income is below the poverty line.

It is important to point out that the age-specific mortality information in the US is well recorded and publicly available. However, I provide some conservative estimates of female poverty because the current measure does not take into account intra-household economic inequality. Indeed, as with most poverty studies, all the household members are considered poor if the pooled household income is below the income threshold. There is some consensus in the literature on the fact that resources are not equally distributed inside the household and, neglecting this fact leads to an underestimation of women's poverty rates (see [Ponthieux & Meurs, 2015](#))⁹. I discuss this concern assuming an extreme case of no sharing in the household and only personal income matters in defining poverty status as in [Corsi et al. \(2016\)](#). Consistent with the literature, I find that women's poverty is much higher while men's poverty is lower compared to the equal distribution approach.

Overall, the results indicate that the total deprivation of both men and women decreased over the last 50 years. Before 1990, men were more deprived than women, but the higher rate of decline among men afterward led to the gender-balanced deprivation rates since the 1990s. The breakdown of the GDI highlights two main periods regarding the role of lifespan and alive deprivation components for both males and females. Between 1970 and 1990, the progress made in mortality reduction over-compensated the increase in poverty, and, as a result, the GDI decreased. After 1990, the mortality rates were relatively constant while poverty continued to fluctuate such that the variations of the GDI were mainly driven by the AD component. Since 1990, the relative advantage of women over men in the premature mortality has been largely absorbed by their disadvantage in income poverty so that the gender bias in GDI has been negligible¹⁰. In the extreme case where only personal income is considered in the definition of poverty, the gender difference in total deprivation (in favor of men) increases, but the gap is still much smaller compared to that with income poverty. Thereby, I conclude that *even when premature death is added to poverty, American women*

⁹Studies reviewed in [Ponthieux & Meurs \(2015\)](#) were conducted in OECD countries, including the United States

¹⁰Note that this results is robust to the age line (60,70) and the relative weight (1,2). I also deal with the exclusion of some individuals like prisoners from the poverty universe in the US. I include them assuming they are all poor, and this increases male poverty, reducing the gender gap.

remain more deprived than men but, the gender gap is much lower than that reported with income poverty.

This overall trend hides important disparities across racial groups. While the income poverty (head-count ratio, HCR) suggests that the highest gender inequality against women is observed in the group of Whites NH, the picture is reversed when the lifespan component is taken into account: The relative position of females in the Majority group is more favorable, while serious gender biases against women are observed in Minorities (and particularly high in the Hispanic group). Indeed, White NH women are very often less deprived than men while the contrary characterizes Hispanics and Blacks. These facts imply that females in Minorities bear higher race penalties compared to males and that they accumulate race and gender disadvantages in a non-additive fashion. Note that within gender racial gaps (in favor of Whites NH) are much more alarming than within race gender inequalities. Finally, since White NH women are more likely to live in couples, their poverty is highly underestimated with the standard approach compared to Blacks. Despite this, women from Minorities face great difficulties, being disadvantaged in terms of gender and race.

This paper contributes to the existing literature on gendered poverty ([Lichtenwalter, 2005](#) ; [Iceland, 2006](#) ; [Provencher & Carlton, 2018](#)) and mortality ([Case & Deaton, 2017](#); [Case & Deaton, 2015](#) and [Ezzati et al., 2008](#)) in the United States. These two strands of the literature have evolved independently, without much reflection on the fact that death is a more extreme form of deprivation. As said previously, considering poverty trends without including an analysis of mortality provides an incomplete picture of changes in overall deprivation. This paper enriches this literature in two ways. First, it uses a novel index called "Generated Deprivation Index" to combine lifespan and alive deprivations in a simple and meaningful manner. Remember that this index satisfies desirable properties unmet by commonly used indices such as Human Development Index (see discussion above). Second, this study is among the first to have explored how the compensation in poverty and mortality has been made since 1970 as these dimensions of deprivation yield conflicting results regarding the direction of the gender gap in the US. The findings provide some nuance to the existing literature by showing that the gender difference in overall deprivation is less pronounced if mortality and poverty are studied together than when they were taken separately. In addition, the existing literature has shown that the relative women's disadvantage in income and poverty was greater in the Majority group than in Minorities ([Snipp & Cheung, 2016](#); [Greenman & Xie, 2008](#)). The results of this study take an opposite direction: women in Minorities experience more gender disadvantage in total deprivation.

The remainder of this paper is organized as follows. Section 2 introduces the Generated Deprivation Index and the data used in this study, while Section 3 presents the patterns of

the gender gap in total deprivation across races. To take into account different measurement concerns, I perform the sensibility analysis in Section 4, whereas in Section 5 I propose brief conclusion.

2 Methodology

In this section, I first present data that were used and then explain the computation of the Generated Deprivation Index.

2.1 Data

Since 1964, the US Census Bureau conducts annually the so-called "Current Population Survey (CPS)" that collects detailed information on individual poverty status and income level in the United States. The CPS data were downloaded from Integrated Public Use Microdata Series (IPUMS CPS) website (Flood et al., 2021)¹¹. I also exploited data from the Survey of Epidemiology and End Results (SEER) that contains information on the US population from 1969 to 2016¹². From these two sources, I constructed a long time series of the number of poor by gender and race in the United States from 1969 to 2016. It should be noted that the determination of poverty status is based on household's total income. Indeed, all the household members are considered as being poor if the household's income falls below the official national threshold. The poverty lines vary with respect to the household size and the age composition of the household, and are adapted annually to the consumer price index at the national level.

Besides, age-specific mortality data for all deaths occurring in the US were downloaded from the website of the National Bureau of Economic Research (NBER)¹³. These data collected by National Center for Health Statistics are publicly available with individual characteristics at the national since 1959. For sensibility analysis, I exploited additional sources: The Bureau of Justice Statistics¹⁴ and The US Census Bureau¹⁵.

¹¹<https://cps.ipums.org/cps/index.shtml>

¹²<https://www.nber.org/research/data/survey-epidemiology-and-end-results-seer-us-state-and-county-population-data-age-race-sex-hispanic>

¹³<https://www2.nber.org/data/vital-statistics-mortality-data-multiple-cause-of-death.html>

¹⁴<https://www.bjs.gov/index.cfm?ty=dcdetail&iid=269>

¹⁵<https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>

2.2 Computation of the Generated Deprivation Index

Following [Baland et al. \(2021\)](#), I proceeded as follows to compute the annual Generated Deprivation Index for each gender, and racial group. First, from mortality data, for each year, gender and racial group, I computed the number of individuals dead at each age by summing up individual records. Having information on age-specific mortality, the second step was the choice of an age line that should be seen as the normal age to die with in the US. I considered in the next steps an age line of 75 years that is close to the average life expectancy at birth in the US between 1980 and 2016 (76.5 years)¹⁶. After I computed for each age a , the number of person-years prematurely lost $PY(a)$ using the following formula:

$$PY(a) = d(a) * (\hat{a} - (a + 1)) \quad (1)$$

Where \hat{a} is the age line, a the age at death, and $d(a)$ the number of individuals dead at age a . I computed $PY(a)$ for all death that occurred at an age lower than the threshold. For all other deaths above, the value of $PY(a)$ is equal to zero. For each year, gender and racial group, I calculated the total number of person-years lost ($d^{GD}(x)$) by aggregating the age-specific $PY(a)$.

$$d^{GD}(x) = \sum_{a=0}^{\hat{a}-1} PY(a) \quad (2)$$

The annual number of poor for each racial and gender group was estimated from the CPS (1969-2016) and the SEEP population data. Having information on poor (p), non-poor individuals (f), and the number of person-years lost in the group (d^{GD}), I was able to determine the annual GDI (P_{γ}^{GD}) at the national level using the following formula:

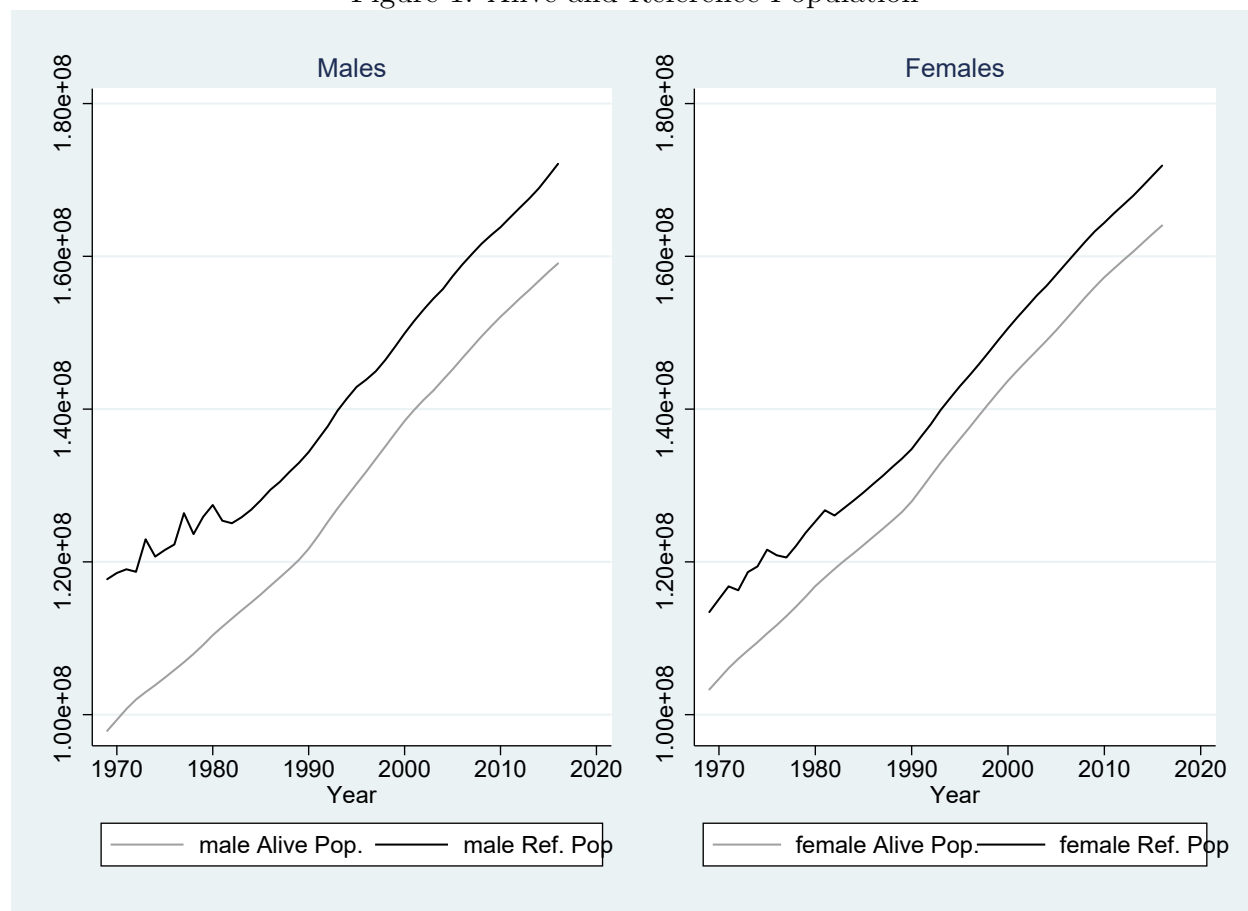
$$P_{\gamma}^{GD}(x) = \underbrace{\frac{p(x)}{f(x) + p(x) + d^{GD}(x)}}_{\text{alive deprivation}} + \gamma \underbrace{\frac{d^{GD}(x)}{f(x) + p(x) + d^{GD}(x)}}_{\text{lifespan deprivation}} \quad (3)$$

Where γ is the relative weight of lifespan over alive deprivation. Being more conservative, I considered a lower bound of γ of 1 meaning that being alive deprived is as bad as being lifespan deprived. The traditional Head Count Ratio (HCR) is calculated based on the living population ($f(x) + p(x)$). Conversely, the reference population for the GDI (and its components) adds the number of prematurely dead individuals ($f(x) + p(x) + d^{GD}(x)$) to compute the total deprivation. [Figure 1](#) shows the differences in these two reference populations for both men and women. As expected, the distance between the two populations is higher for males than for females given that the firsts are more likely to die prematurely. This implies that, once we account for lifespan deprivation, we will be less pessimistic regarding

¹⁶Men's average is 73 while for women it reaches 79.4 (<https://www.cdc.gov/nchs/hus/contents2017.htm>)

the relative position of females than the literature focusing on HCR only.

Figure 1: Alive and Reference Population



Note: This figure shows the difference between the Alive Population and the reference population used in the GDI Calculations for both males and females

As said previously, the GDI is an aggregation of two components: lifespan (LD) and alive deprivation (AD). It is important to note that the Head Count Ratio (HCR) is different from the AD even though these two convey the information about income poverty. Indeed, the former represents the proportion of the poor in the living population when the latter considers in addition, the population died prematurely. When premature mortality among the poor increases, both the HCR and AD will be affected negatively but in different magnitude. The interpretation of AD requires the LD part of the GDI while HCR provides self-sufficient information. The comparison of the evolution of these two indices may give an idea of the HCR limits as discussed previously. [Table 3](#) in the Appendix shows how different are the dynamics of these indicators. While the HCR suggests a modest annual increase in income poverty over the period (0.025 pp), the AD shows that the increase is much higher (0.041 pp). The annual reduction of the gender gap with AD is slightly larger than that reported

by the HCR (-0.011pp for HCR vs -0.018 pp for AD).

As explained, we need information on poverty and mortality to compute the GDI. Therefore, I calculated the GDI at the national level from 1969 to 2016. In addition, for all the periods, we computed the indicators for Whites and Blacks. Detailed information on other races was available only from 1990 onward, the year from which I computed the indices for Whites non-Hispanics (Whites NH), Hispanics, and Blacks.

3 Main Findings

In this section, I first present gender differences in total deprivation, and second, I explore racial differences.

3.1 Pattern of total deprivation by gender in the United States

Let us start by commenting on the overall evolution, and then we turn to gender comparisons. [Figure 2](#) presents the evolution of the total deprivation and the Head Count Ratio (HCR) by gender in the US. We observe from the first figure that, in general, there has been no clear trend of income poverty (HCR) since 1969¹⁷. The pattern is very different when I combine mortality and poverty: there seems to be a decreasing trend in the Generated Deprivation Index (GDI) with some fluctuations. To accurately interpret this trend, I decompose the GDI into its Lifespan Deprivation (LD)¹⁸ and Alive Deprivation (AD)¹⁹ components. [Figure 3](#) shows that there has been a decreasing trend in the LD component while the income deprivation slightly increased at an average rate of 0.01 pp per year. The combination of information from [Figure 2](#) and [3](#) allows to distinguish two periods regarding the contribution of these two components on the GDI's behavior (note that figures on average annual change are reported in [Table 1](#)): Before 1990, there is a negative trend in GDI driven by a strong decrease in LD whereas, after 1990, we observe a small additional decrease in LD and large fluctuation in GDI dictated by the trend in AD. More precisely, the total deprivation rate (GDI) went from 24% in 1969 to 19% in 1990 (annual average decrease of 0.15 pps) despite a slight increase of the AD from 11 to 12% (annual increase of 0.16pp). In this period, the downward trend is driven by the decrease of LD from 13 to 7% (annual decline of 0.31pp). The second period which spans from 1990 to 2016 is characterized by a slowing down of the declining rate of LD (-0.05 pp per year) and higher variability

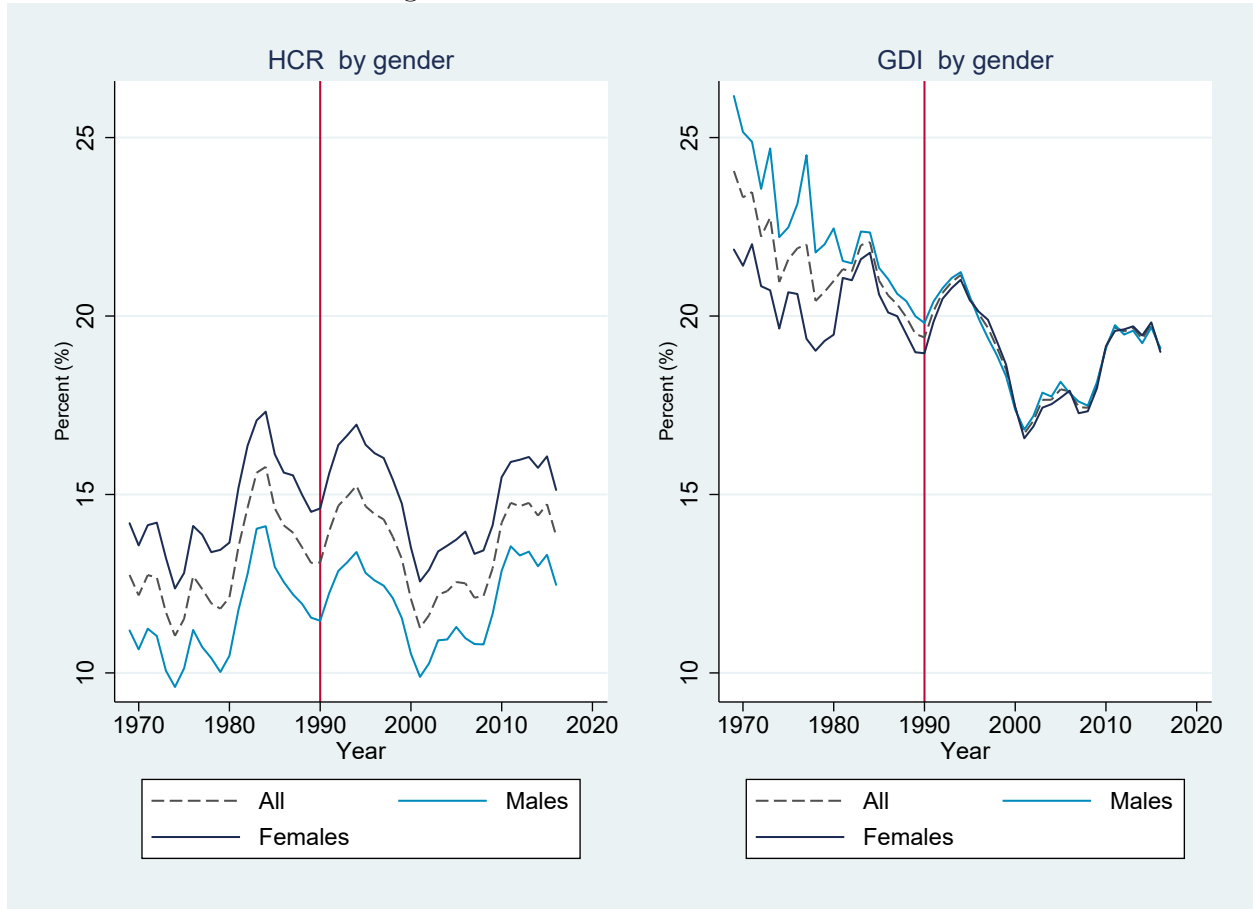
¹⁷Poverty is still a widespread phenomenon in the US, despite the increase in GDP per Capita during the last 50 years. [Hoynes et al. \(2006\)](#) found that the stagnation in the median wage and the increase in inequality may explain the lack of change in poverty. Moreover, poverty has not declined as a result of women's increased participation in the labor market due to the increase in single parenthood among females.

¹⁸Proportion of Person-years prematurely dead in the reference population

¹⁹Proportion of poor in the reference Population

of poverty which entirely dictates the trend of the GDI. For example, in this segment, the minimum levels of the GDI (16.7%) and AD (10.5%) are both observed in 2001, while the maximums are in 1994 (21% and 14% for GDI and AD deprivation). Regarding the LD, it has been below 7% since 1991 and its variability is low (minimum of 5.7% and a maximum of 7.1 %). This suggests a weak influence of the LD component on the GDI during this period.

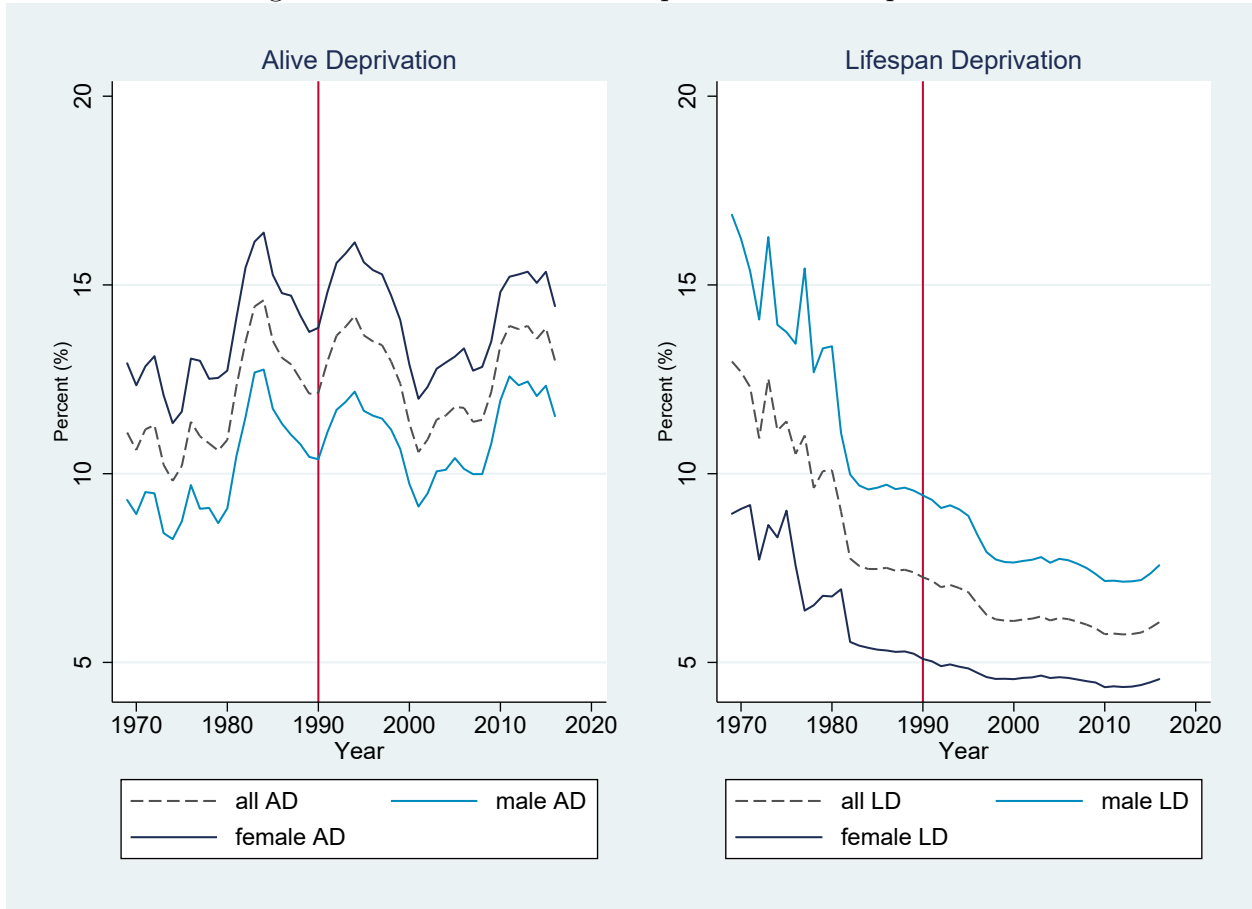
Figure 2: Evolution of GDI and HCR



Note: This figure highlights the evolution of the GDI and HCR in the US from 1969 to 2017

Turning to trends in gender differences, the GDI provides a very different picture from the HCR. [Figure 2](#) shows that women are poorer than men and the gender gap is almost stable over the entire period (Min 2.4pp, Max of 3.6pp, st dev 0.36pp). In contrast, the GDI curve suggests that overall deprivation was higher for males until 1990 and extremely similar afterward. In fact, over the whole period, the poverty rate of women is around 3pp higher than that of men. Regarding the total deprivation, in 1969, males' rate is 5 pp higher than females', and since the 1990s, the gender gap has been narrowed considerably (for example, GDI of 20% for Males and Females in 1991). This similarity in men's and women's GDI hides important gender differences in the individual components ([Figure 3](#)). Men's advantage in

Figure 3: Evolution of the lifespan and alive deprivations



Note: This figure decomposes the GDI in [Figure 2](#) into the lifespan and alive deprivations components

AD remains stable at about 3 pp (as in HCR) over the period, while women’s advantage in LD decreases. The later evolution is driven by a very rapid decrease in men’s LD at an average rate of 0.19 pp each year (vs 0.09 pp for women). Meanwhile, the annual changes in the AD are close across gender (+0.05 and +0.03 pp per year for women and men, respectively). We also notice that on the entire period (1969-2016), the GDI of men decreases at an average rate of 0.14 pp while for women the decrease amounts to 0.06pp. Therefore, I deduce that the increase of Income deprivation is more compensated for males than for females by the decreasing behavior of the LD.

The relative contributions of mortality and poverty to the overall deprivation are not the same over the entire period. The lifespan component influenced more the GDI especially for men before the 1990s while the importance of Income deprivation became more evident for both men and women thereafter. In the beginning, in 1969, the lifespan deprivation rate of males was 8pp higher than that of females (17% and 9% for males and females, respectively). At the same time, females’ income deprivation rate was 4 pp higher than males’

(13 and 9% respectively). [Figure 2](#) and [3](#) highlight that the declining trend in males' LD from 17% in 1969 to 9.4% in 1990 (-0.4 pp annually) led their GDI to decrease by 0.2 pp each year on average ²⁰. Besides, the decline in females' LD (-0.2pp per year) was fully absorbed by an increase of income deprivation (+0.2pp) so that there was no remarkable variation in their total deprivation (GDI). The period from 1990 onward is characterized by both a lower rate of decline and lower variability in LD, such that the GDI curves replicate the behavior of the AD. Males and females' AD and GDI are very volatile (with a trough in 2000 and a peak in 2010) in the way that, on average, there is no clear trend in this period.

3.2 Racial differences

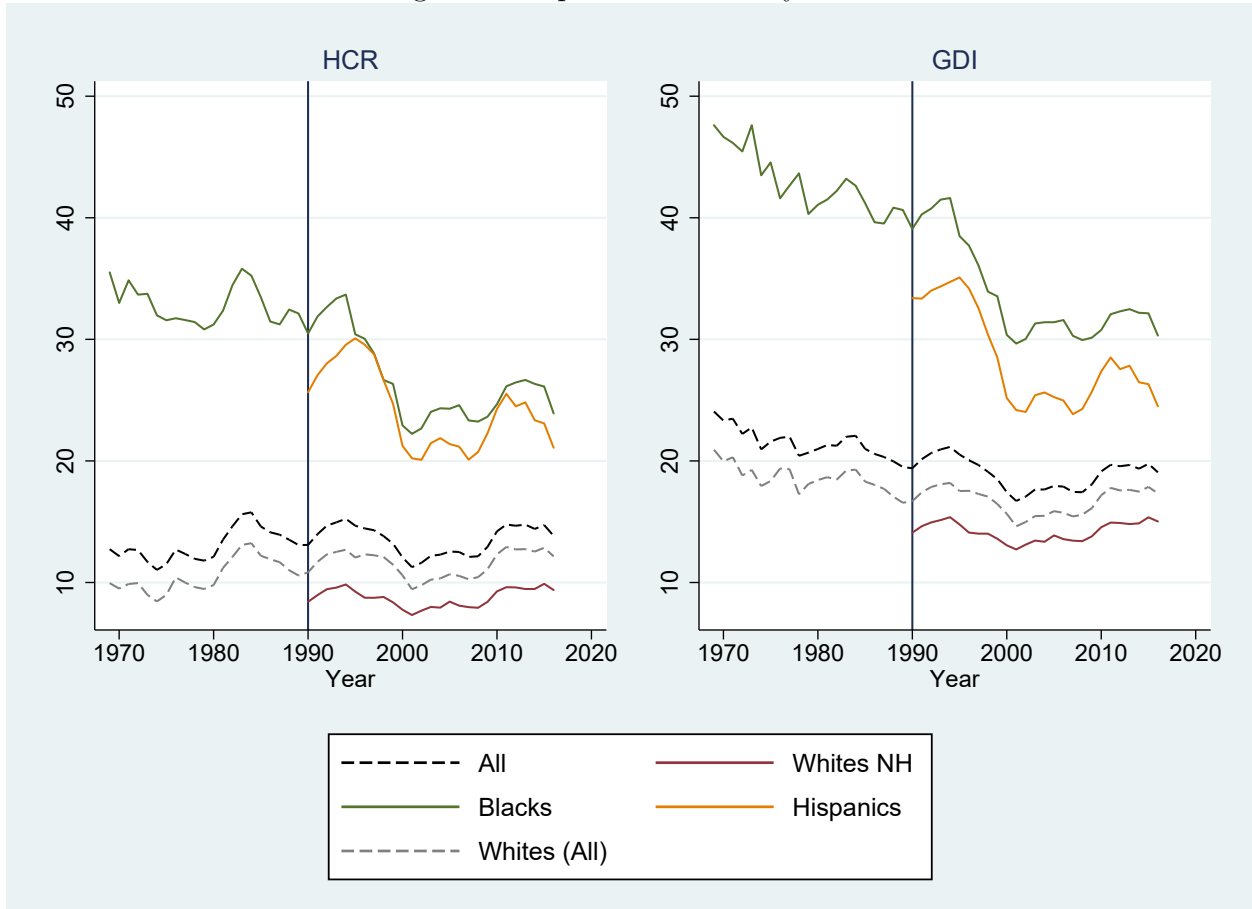
The overall trend presented above hides important racial disparities that I propose to explore. I begin with a brief discussion on racial differences and then examine the gender gap in each race.

Two pieces of information emerge from [Figure 4](#) and [5](#). First, the deprivation rates in Minorities (Hispanics and Blacks) are extremely high compared to the Majority group (Whites Non-Hispanics). In addition, the racial gap with total deprivation is more alarming than that with income poverty. Second, there seems to be notable progress in the GDI reduction for Hispanics and Blacks, while no significant change is observed in the group of Whites NH. These dynamics lead to the contraction of racial discrimination even though convergence is far from achieved. The decline of GDI among Minorities is predominantly driven by their rapid decrease in mortality (before 1990) and income poverty (more pronounced after 1990), while changes in the Majority group are more modest. To elaborate on this, we first look at the difference between Whites (Hispanics and No-Hispanics) and Blacks and consider Hispanic origin after 1990²¹. The deprivation rate is structurally higher among Blacks (mean 37.8% std 5.7) than Whites (mean 17.6% std 1.4) over the entire period. Besides, the annual decreasing rate in GDI is higher in absolute value for Blacks (-0.38pp vs -0.07pp for Whites, [Table 1](#)) and, this reduces the gap between these two racial groups. Among Whites, the total deprivation rate is the highest for Hispanics (mean 28.4% std 4) compared to Whites NH (mean 14.1% std 0.8). Nonetheless, despite the net advantage of White NH in AD, the decreasing rates in AD (-0.18pp) and LD (-0.18) are the highest for Hispanics such that the intra-Whites difference in GDI has been reduced significantly at an annual rate of 0.38 pp since 1990 (see [Table 5](#) in the Appendix). Inside the Minority group, we observe that Blacks (compared to Hispanics) have been at a disadvantage in HCR and GDI since 1990. In the remainder of this study, given the unavailability of data before 1990, we limit the analysis from 1990 to 2016 and focus on the three main racial groups: White NH, Black, and Hispanic.

²⁰the low marginal change of GDI is due to the increase in AD for both gender groups

²¹The ethnic distinction between Hispanics and Whites NH starts in 1990

Figure 4: Deprivation rates by Race

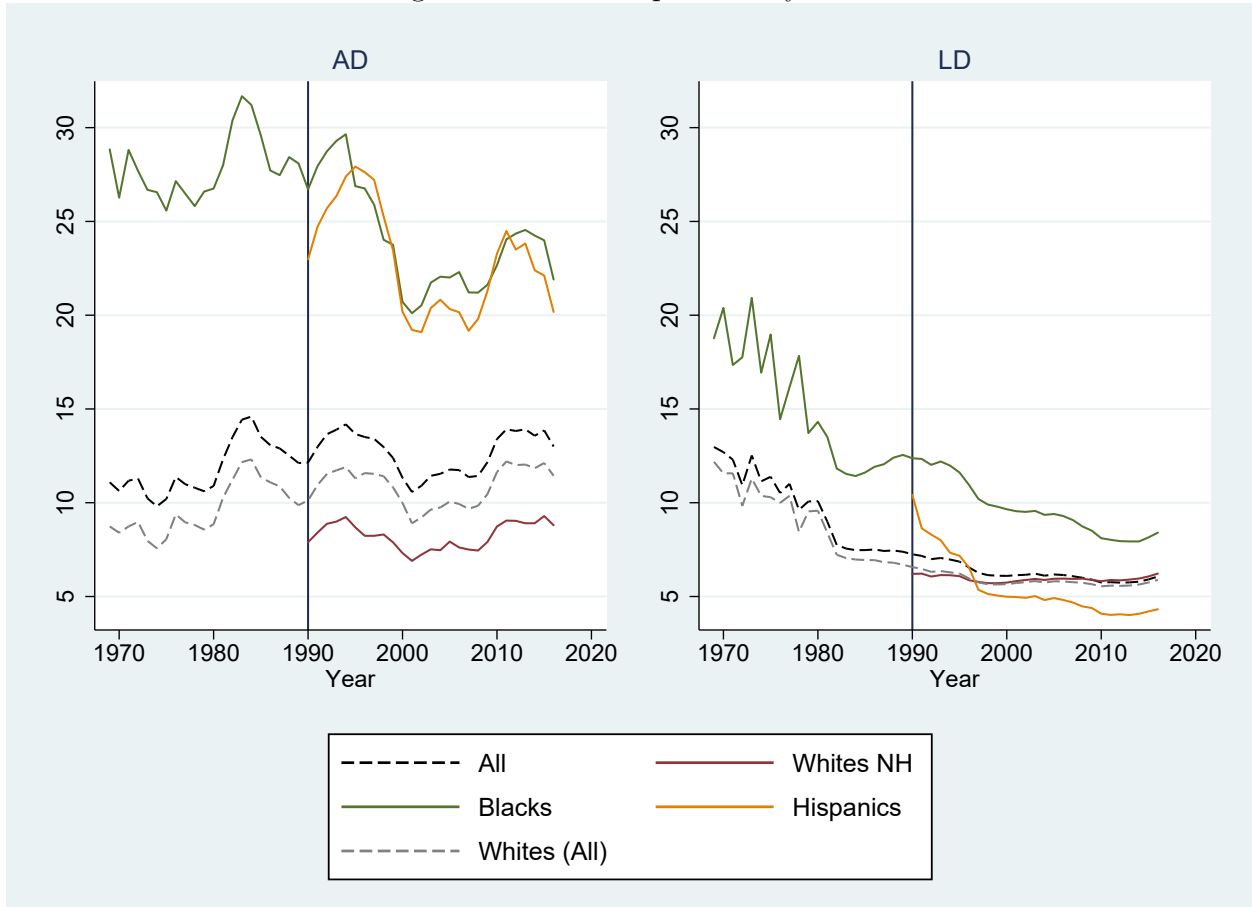


Note: This figure reports GDI and HCR for each racial Group. The subdivision between Hispanic and Non Hispanic Whites Start from 1990

Let us move to gender differences in the evolution of GDI and its components in each racial group. I highlight three main facts from [Figure 6](#) and [7](#) (combined with [Table 1](#)). The racial gaps in the total deprivation are more alarming than the intra-race gender gap (see more details in [Table 4](#) and [5](#) in the Appendix). For instance, the deprivation rate (GDI) of females Blacks is, on average, 20.19 pp higher than that of Whites NH (18.79 pp for men), while the intra-black gender difference is lower than 1pp. For Hispanics, the racial gap among females (compared to Whites NH) reaches 15.31 pp on average, whereas the gender gap represents 1.47pp. The racial gap between Hispanics and Blacks is less severe, and stems primarily from the net advantage of Hispanics (males and females) in terms of lifespan deprivation.

Second, the direction of the gender gap in racial groups differs tremendously: women in Minorities have always been more deprived than men while their relative position in the

Figure 5: GDI Components by Race

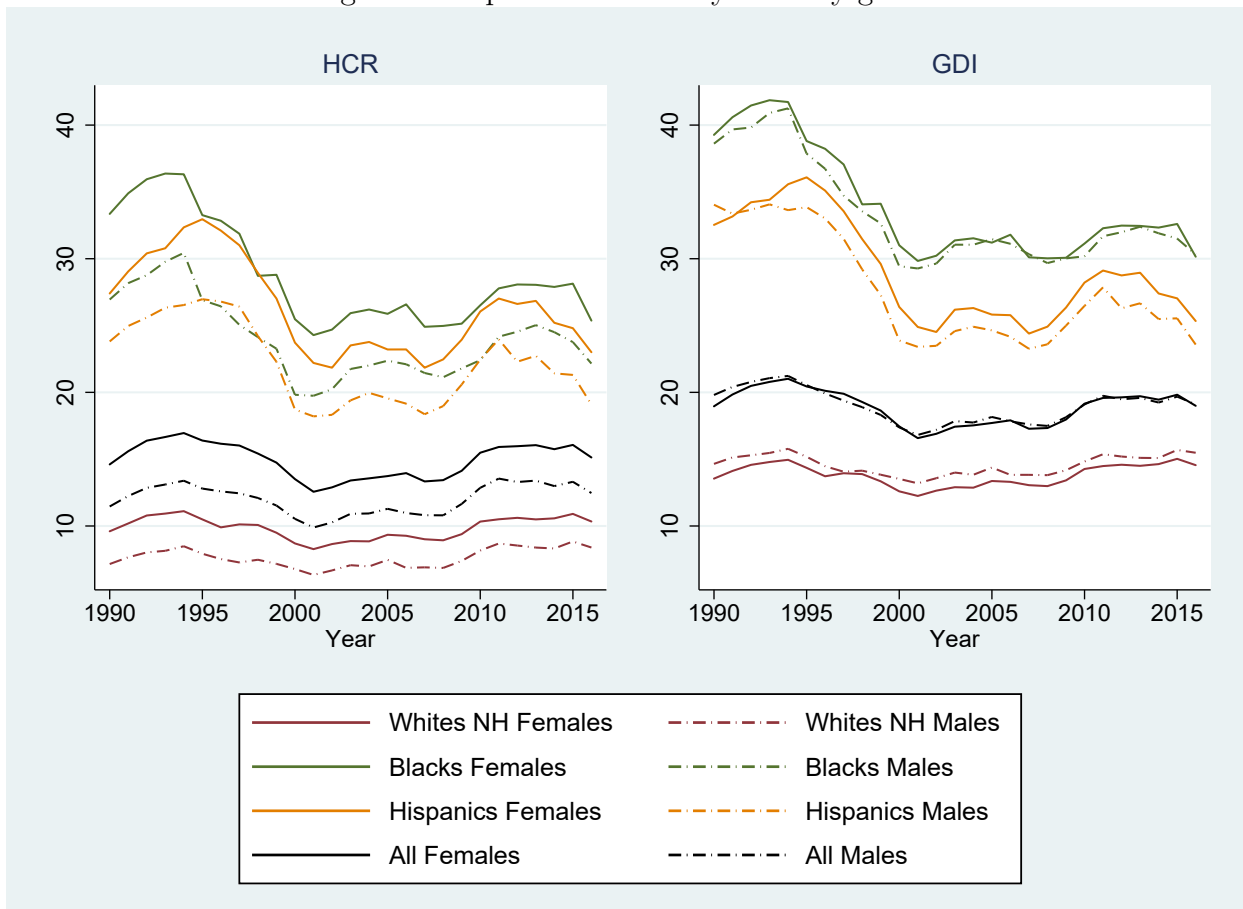


Note: This figure AD and LD components for each racial Group. The subdivision between Hispanic and Non Hispanic Whites Start from 1990

Majority group has always been favorable. Indeed, the GDI among White NH females is, on average, 0.75 pp higher than that of males, and the gap does not change over the period. In contrast, Hispanic women have always experienced higher deprivation rates than men (1.47pp), and the gap has been increasing since 1990 at an average annual rate of 0.05pp. In the group of Black, the gender difference is low (0.7pp) and has been decreasing at an annual rate of 0.04pp.

Third, the relative contribution of premature mortality and income deprivation in shaping the GDI gender gap varies across races. While on average, in all racial groups, women are at a disadvantage in AD and an advantage in LD, the magnitude of the gender gaps and their annual variations are different (Table 4). In Minorities (Black and Hispanics), for the average year, the relative advantage of women in LD (4.95 for Blacks and 3.31 for Hispanics) is not sufficient enough to compensate for their gap in AD (5.65 and 4.77 for Blacks and Hispanics, respectively). As a consequence, Women in Minorities are in the worst position

Figure 6: Deprivation rates by Race by gender

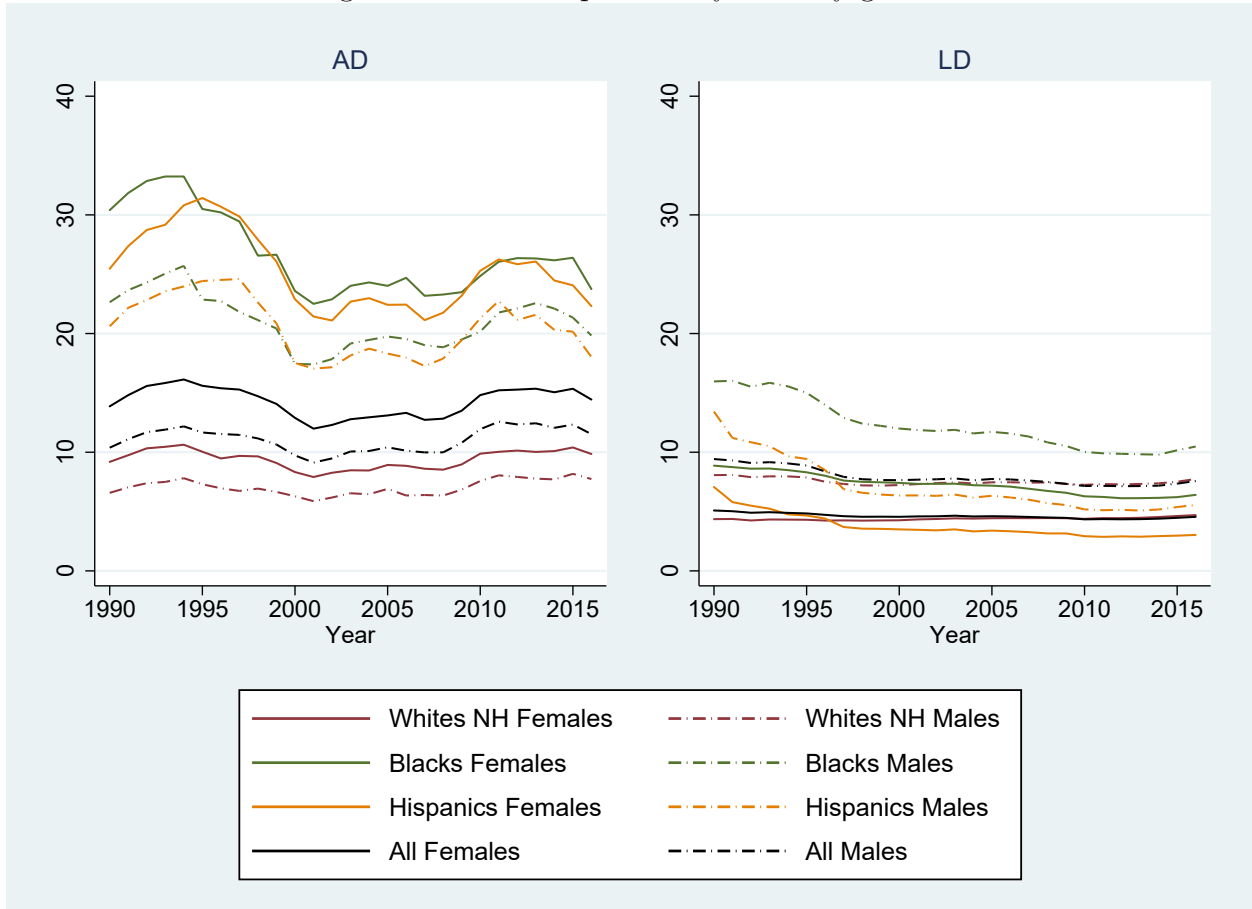


Note: This figure reports GDI and HCR for each racial Group. The subdivision between Hispanic and Non Hispanic Whites Start from 1990

in total deprivation compared to men while in the Majority group, the contrary is observed. Regarding the evolution, in the group of Blacks, women experience a higher decline in AD, whereas men’s LD falls more rapidly. Given these facts, we observe negligible gender differences in the GDI annual change (0.37 pp for males and 0.41 for females). In the pre-1990 period, men were more deprived, but the gender difference in LD reduction (in favor of Males) dominated the gap in AD decline (in favor of Females) in the way that the gender gap in GDI (in favor of Males) has been low in the group of Blacks during the post-1990 period²². The historical disadvantageous position of Women in the Hispanic group results from the fact that, since 1990, males have always experienced a sizable decline in both AD and LD, such that the GDI has been at their advantage. In the group of Whites NH, males’ advantage in income deprivation has never been high enough to compensate for their disadvantage in mortality. Therefore, White NH women have been less deprived than men since

²²On average, The gap between Black Males and Females (F-M) is 0.7pp, and the annual declining rate attains -0.04pp (Table 4)

Figure 7: GDI Components by Race by gender



Note: This figure AD and LD components for each racial Group. The subdivision between Hispanic and Non Hispanic Whites Start from 1990

1990.

To further analyze these trends, [Figure 8](#) plots females' deprivation over males' for each racial group. The ratio should provide more precise information on gender inequality in the sense that, it is less sensitive to the scale as compared to the absolute gap. The greater value of the ratio implies more disparity against women²³. The left graph considers the Head Count Ratio whereas the right concerns the Generated Deprivation. I start by commenting on the GDI and gender bias in each racial group and then, I look at the trends.

The results in [Figure 8](#) confirm previous findings obtained with the absolute gap: the gender differences against women are more marked in the group of Hispanics and Blacks²⁴, whereas the curve of Whites NH reveals permanent female's advantage in total deprivation

²³If the ratio is below 1, men are more deprived than women

²⁴The pattern of gender difference among Blacks is closer to the national average

Table 1: Average annual change of deprivation rates (percentage points)

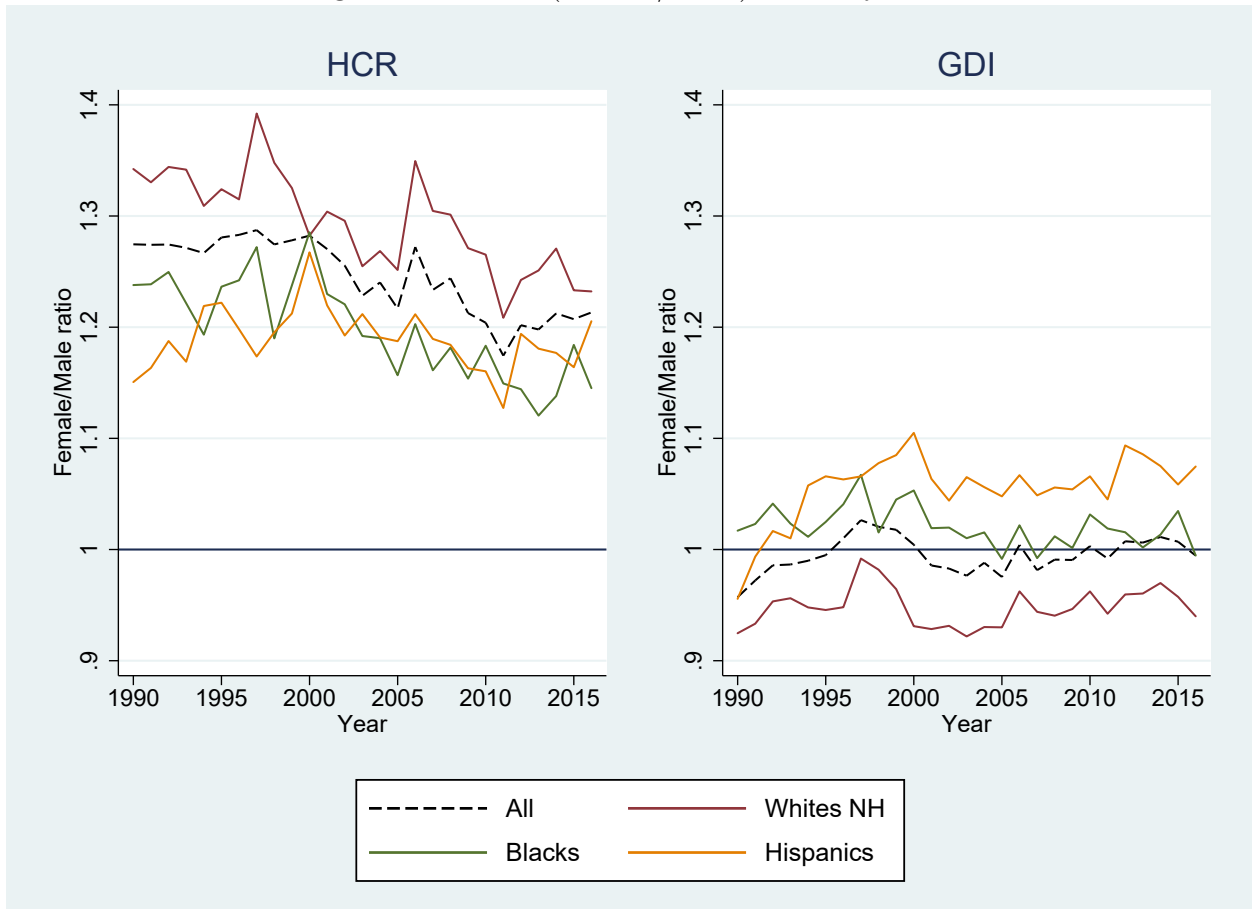
	Before 1990			After 1990			All years		
	AD	LD	GDI	AD	LD	GDI	AD	LD	GDI
All	0.16**	-0.31**	-0.15**	0.00	-0.05**	-0.05	0.04**	-0.14**	-0.10**
Male	0.16**	-0.40**	-0.24**	0.03	-0.08**	-0.06	0.05**	-0.19**	-0.14**
Female	0.16**	-0.22**	-0.06	-0.02	-0.02**	-0.04	0.03*	-0.09**	-0.06**
White	0.17**	-0.29**	-0.12**	0.02	-0.03**	-0.01	0.06**	-0.13**	-0.07**
White Male	0.17**	-0.37**	-0.20**	0.03	-0.05**	-0.02	0.06**	-0.17**	-0.11**
White Female	0.17**	-0.20**	-0.04	0.00	-0.01*	-0.00	0.05**	-0.08**	-0.03*
Black	0.10	-0.45**	-0.35**	-0.21**	-0.18**	-0.39**	-0.15**	-0.23**	-0.38**
Black Male	0.08	-0.54**	-0.46**	-0.12*	-0.25**	-0.37**	-0.10**	-0.30**	-0.40**
Black Female	0.11	-0.35**	-0.24**	-0.30**	-0.11**	-0.41**	-0.20**	-0.17**	-0.36**
Hispanic				-0.18**	-0.18**	-0.37**			
Hispanic Male				-0.14*	-0.25**	-0.39**			
Hispanic Female				-0.23**	-0.11**	-0.34**			
White NH				0.01	-0.00	0.01			
White NH Male				0.03	-0.02**	0.01			
White NH Female				-0.00	0.01**	0.01			

Note: This table reports the average annual change of each indicator in percentage points. Growth is computed by running a regression of the indicator on year. White include Hispanic and White No Hispanic (White NH). Data for Hispanic origin are available from 1990. A */** next to the coefficient indicates significance at the 5%/1% level.

since 1990 (for several years the deprivation rate of White NH women represents on average 95% of the rate of men.). [Figure 8](#) clearly shows that the Hispanic group has the largest gender difference in the total deprivation, with a peak in 2000²⁵. The most interesting point is that these racial differences described above are almost reversed if we would focus on AD or HCR only: Whites NH appear as the group with the highest female disadvantage while Hispanics and Blacks exhibit the lowest (gender bias for Hispanics and Blacks are close). In fact, AD and HCR gender ratios for Whites NH are always above the national level and women's deprivation rates represent for some years more than 140% of the rates of men. These findings are consistent with [Snipp & Cheung \(2016\)](#)'s paper which revealed that, in the US, the highest wage gender gap is found in the Whites NH group. The question that follows is how these reversions between HCR and GDI gender ratios are made? My claim is that men in Minorities experienced a sharp decline in racial differences in LD compared to women. To elaborate on this, consider the intra-gender racial gap for the mean year as presented in [Table 4](#). Hispanic males and females have a racial advantage in LD (compared

²⁵The gender gap in Hispanics group is explained by the fact that from 1990 to 2000 the gender difference in LD (mean of 4.3pp in favor of females) continuously falls (from 5.4pp in 1990 to 2.8 in 2001) while the gap related to the AD (mean: 5.8pp in favor of males) is kept constant (5.2 and 5.3 in 1990 and 2000, respectively). After 2000, the gap in both LD and AD does not change much such that females keep their disadvantageous position

Figure 8: Gender (Female/Male) Ratio by Race



Note: This figure indicates for each racial group the ratio of female’s deprivation over male’s. The ratio of 1 means perfect gender equality

to Whites NH) of 0.42 and 0.60 pp, respectively. The average annual increase in the gap represents 0.23pp for males and 0.13pp for females. The following year, in relative terms, the racial advantage will increase by 0.54% and 0.22% for males and females, respectively. Using the same logic with AD, the relative decrease in the AD racial gap is 0.0123% for males and 0.0144% for females. By combining AD and LD, the racial gain for men is greater than that for women, which turns the gender difference in GDI in favor of men. In general, the AD curve mimics the behavior of the HCR meaning that the reversion stems primarily from the gender difference in the dynamics of lifespan deprivation.

Looking at the dynamics, there seem to be important racial disparities in the trends of HCR and GDI gender ratios. While the HCR trend among Whites NH suggests a sizable diminution in gender difference over time, their GDI ratio curve is relatively flat (from a corner baseline level) implying, no major change. In contrast, for Hispanics, the HCR gender difference curve is relatively flat whereas GDI exhibits an increase of women’s disadvantage

Table 2: Average annual change of deprivation ratios (percent)

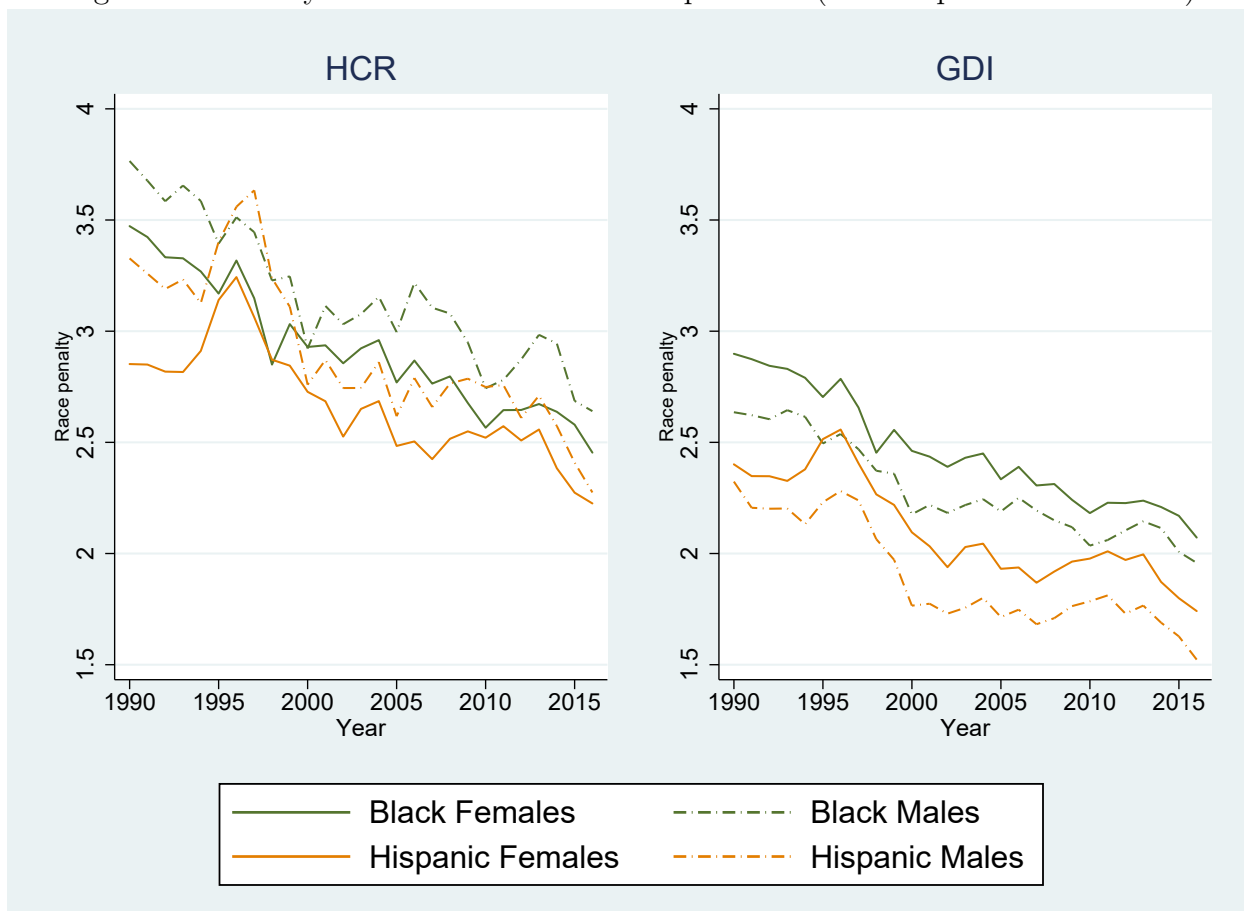
Racial Group	HCR	AD	LD	GDI
All	-0.13***	-0.24***	0.28***	0.36***
Black	-0.07**	-0.25***	0.15	0.09**
Hispanic	-0.05	-0.20***	0.42***	0.20***
White NH	-0.34***	-0.37***	0.52***	0.03

Note: This table reports the average annual change of gender ratios (Females/Males) in percent. Growth is computed by running a regression of log of gender ratios ($\ln(\text{Female}/\text{Males}) \times 100$) on year from 1990 onward. We say for instance that Between 1990 and 2016, the GDI gender ratio decreased by 0.36% each year for all Americans. A */**/** next to the coefficient indicates significance at the 10%/5%/1% level.

over time. We observe a more stable situation in GDI in the group of Blacks and a slight decrease in HCR gender ratios. To better understand these patterns, I look at the evolution of GDI components in Table 2. The AD typically follows the behavior of HCR (in terms of the sign of coefficients). Between 1990 and 2016, the income poverty rate among Whites NH women slightly decreased whilst men’s rate increased, and as a consequence, men’s advantage is decreasing over time (by 0.34% annually). In the meantime, there is a slight increase in females’ mortality (LD) and a decrease in males’ such that the gender ratios increased by 0.52% each year. These two tendencies combined result in a flat behavior of the gender difference in the GDI. For Hispanics, men experience an important decrease in mortality compared to women whose relative advantage in LD falls by 0.42% per year while there are no sizable gender differences in Income deprivations trends (0.2% per year). This leads to an increase in the total deprivation gender ratio by nearly 10pp between 1990 and 2016 (0.2% per year). The group of Blacks is characterized by a considerable compensation process across gender: men’s advantage in income deprivation continuously falls (0.25% per year), whereas their relative disadvantage in LD is decreasing (0.15% per year). Therefore, the gender gap in total deprivation is kept more or less constant and low (despite a slight annual increase of 0.09%).

An important strand of literature has investigated women’s double jeopardy hypothesis. According to this assumption, women in Minorities accumulate the double disadvantage of being at the intersection of the most vulnerable groups (Minority and woman). These studies usually omit the net women’s advantage in life expectancy. The question is whether once we take into account the lifespan deprivation component, could the conclusion about the double jeopardy change? From the previous findings, the highest women disadvantage in Minorities compared to the Majority group is consistent with higher race bias for Black and Hispanic females than males. We may also wonder how do women in Minorities accumulate gender and racial disadvantages? In Sociology literature, Greenman & Xie (2008) reviewed

Figure 9: Minority Males and Females racial penalties (with respect to White NH)



Note: This figure plots racial penalties for each gender group in minority with respect to Whites NH Males. The higher the curve, the greater the race penalty.

two possibilities. On one hand, women in Minorities may accumulate in an additive manner meaning that their disadvantage is the sum of race and gender penalties. On the other hand, the intersectionality perspective suggests that the size of the race penalty may differ across gender (or gender differs across race). In this regard, women’s disadvantage will be different from the simple addition of race and gender penalties. I try to answer this question in the following lines by exploring the evolution of the racial penalty by gender. I proceed as in [Greenman & Xie \(2008\)](#) to determine the racial penalty in Minorities. I first compute each gender and racial group deprivation ratio with respect to Whites NH Males considered as reference. The idea is that in the absence of intersectionality, Males’ race penalty should be the same as Females’ in the Minority group ²⁶.

²⁶For better understanding, let us imagine that the ratios are 1 and 1.5 for Whites NH Men and Women respectively while for Minority, the ratio is 2 for men. In the absence of intersectionality Females ratio in the Minority should be equal to 3 (1.5*2) meaning that Males and Females suffer a race penalty of 100%. The distance between males’ and females’ race penalties will provide an idea of intersectionality.

Figure 9 plots these intra-gender racial penalties. The left panel of Figure 9 for income poverty (HCR) and shows that for both Hispanics and Blacks, men’s penalties are greater than women’s in the majority of cases, meaning that Minority women pay lower racial penalties compared to men²⁷. There is, however, a slight diminishing tendency of these gender differences in racial penalties. The right graph considers the total deprivation and highlights opposite evidence. For both Hispanics and Blacks, the race penalties are higher for Females than Males suggesting that the additive assumption does not hold. This is particularly due to a higher decline in premature mortality for men in Minorities. This confirms the previous findings that, in relative terms, the reduction of the intra-gender racial disparity in mortality is more pronounced for men than for women. Furthermore, we note that the gender differences in racial penalties are more marked in the Hispanics group compared to Blacks. Hispanic men and women have experienced a sizable reduction in mortality such that the racial difference has been at their advantage (their LD rate is lower than the White NH’s) but the decline rate has been significantly higher for men than women.

To sum up this section, a general picture can be drawn about deprivation in the United States by race. For both HCR and GDI, Minorities exhibit higher deprivation rates than Whites NH. In the Minorities, men have been keeping their advantage, but this is less compared to the case in which we would only consider income. The highest gender gap is found in the group of Hispanics in which men experienced a large decrease in AD and LD. Whites NH women have been experiencing lower total deprivation rates than men since 1990 due to their advantage in LD that over-compensates their income disadvantage. Note that the picture is reversed if we would consider income poverty only: the relative position of females was more favorable in Minorities than Whites NH. Notwithstanding this tendency in GDI, there is still a need to pay attention to gender differences in income distribution because it has been shown that in recent years, the reduction of premature mortality is limited and the behavior of GDI is a direct consequence of income deprivation. Efforts that aim at reducing the income gender gap should be reinforced to ensure that women’s relative position is structurally improved.

The results presented above depend on the choices of weight and age line. In addition, as mentioned previously, there exist important limits related to poverty measures used in the United States. In the next lines, I explore how robust are the findings to the choice of the parameters and provide some discussions on the measurement issues.

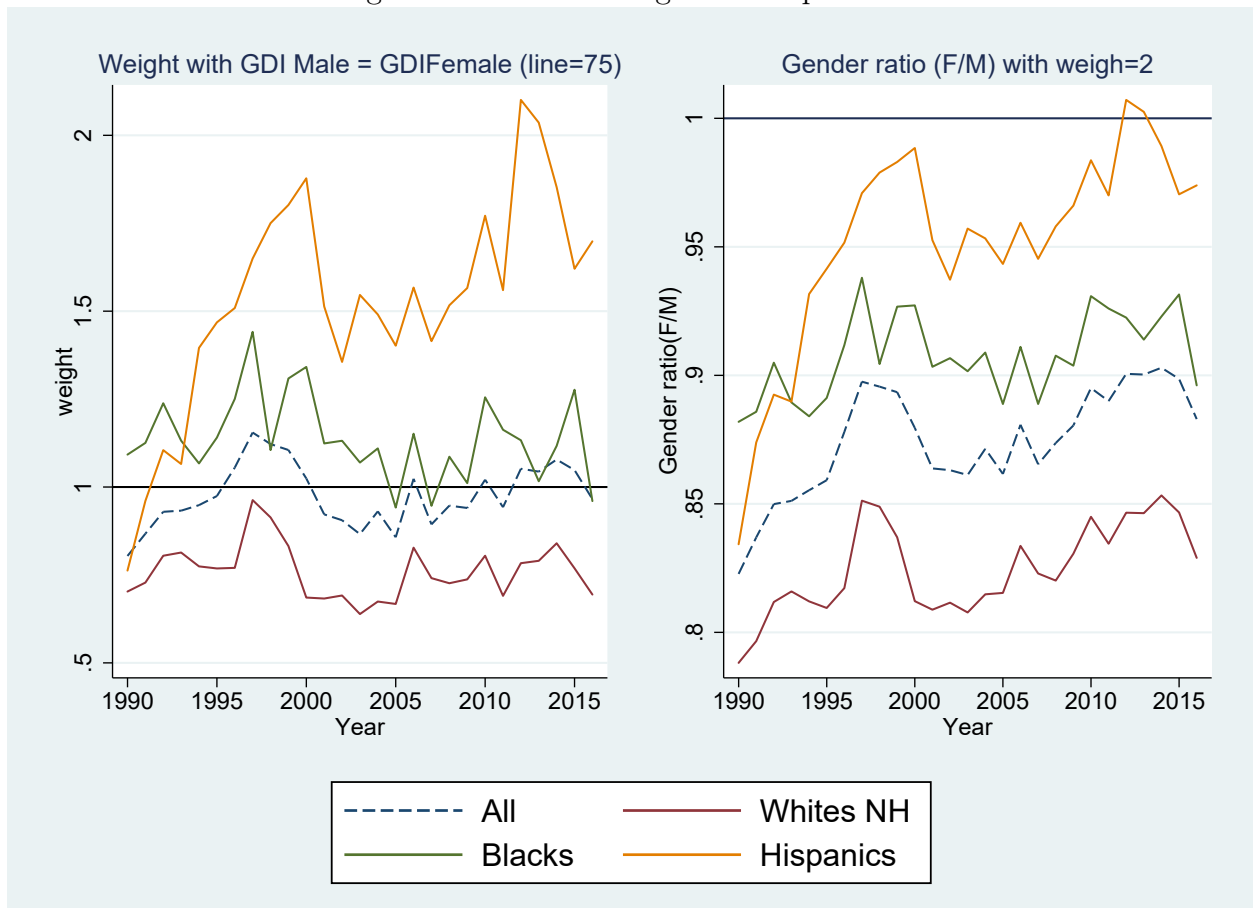
²⁷We could also interpret that, Minority women pay lower gender penalty than White NH

4 Sensitivity analysis

In this section, I analyze how sensitive are the results to the choice of the weight and age line. I also explore the influence of some "missed individuals (prisoners)" in the poverty universe on the findings. Finally, I estimate deprivation indices considering the individual's income rather than the household's.

4.1 Relative Weight and Deprivation

Figure 10: Relative weight and deprivation



Note: The first figure (left) displays at national level the relative importance of lifespan deprivation (relative to alive deprivation) needed to ensure perfect gender equality in GDI. The second highlights the gender ratio with the weight of 1 and 2

Let us remind that the weight represents the relative importance of lifespan deprivation over income deprivation and was set to 1 in previous estimates. Figure 10 reports, on the one hand, the weight needed to attain perfect gender "equality" in deprivation and the sensibility of the gender ratios to the weight, on the other hand. The weight below 1, in

the left panel, means that gender equality would be obtained even if lifespan deprivation is considered as less important than economic poverty. Overall, before 1995, the obtained weight is below 1, indicating that even with a low weight attributed to premature death, the lifespan advantage of women could compensate for their disadvantage in terms of income deprivation. After 1995, the weight fluctuates around 1 (with a maximum of 1.15 in 1997). Consistent with previous results, in the group of Whites NH, premature mortality has to be less important than income poverty to achieve gender-balanced deprivation rates while in the Minorities, more relative weights (higher than 1) should be given to lifespan deprivation. Since it is commonly believed that individuals generally give more value to life than income (weight higher than 1), the conclusion about gender parity when lifespan is included in total deprivation is very robust to the choice of weight ²⁸.

The right panel of [Figure 10](#) shows it more clearly: if premature death is twice as detrimental as income deprivation, the relative position of females in all racial groups is always better than that of males (gender ratio below 0.9). However, racial differences remain striking. Gender differences in Hispanic groups are always higher and increasing over time meaning that for some periods, women would be more deprived than men even if living is considered twice as important as not being poor. The ranking of curves by race also reinforces the finding that women in the Majority group are in the best relative position compared to those in Minorities.

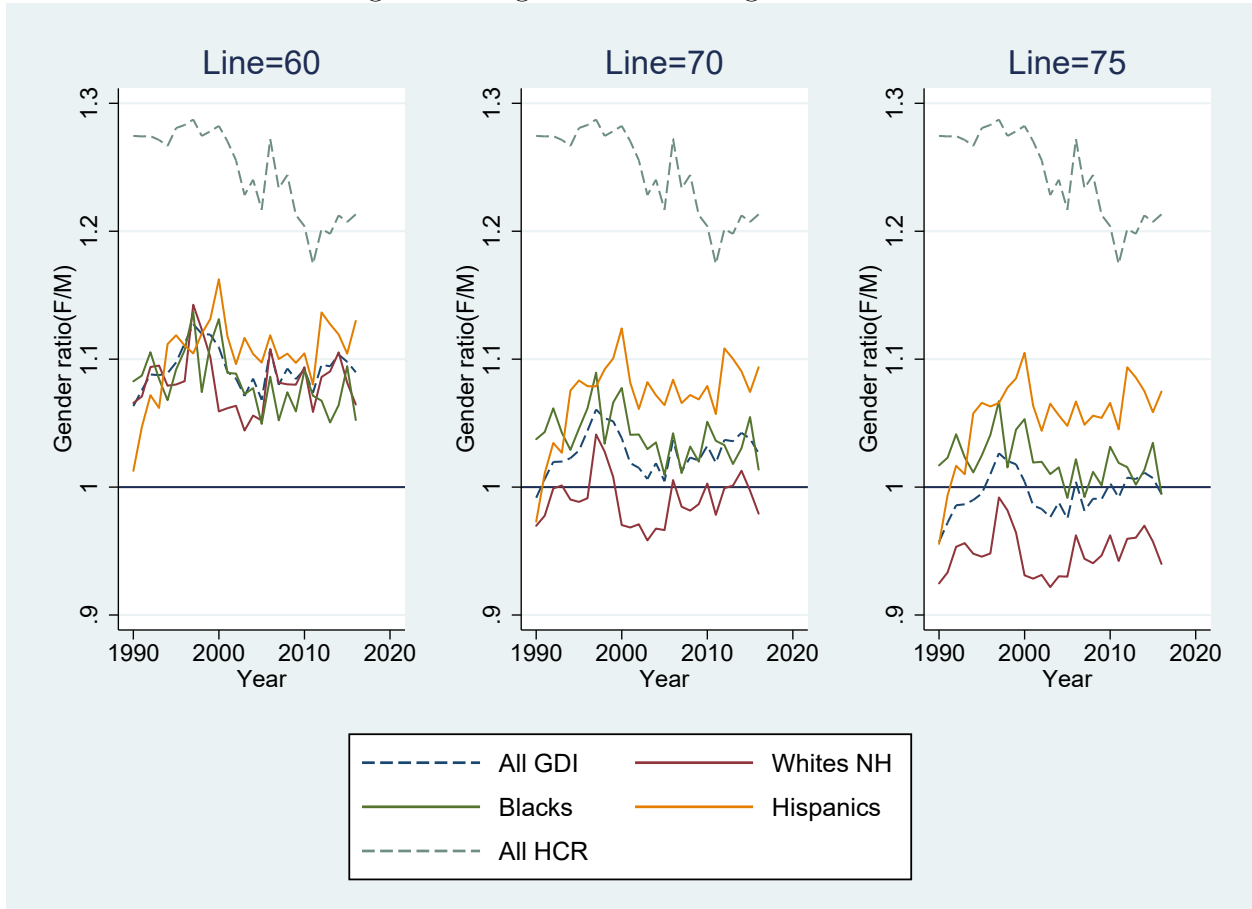
4.2 Age line et Gendered Deprivation

I explore in [Figure 11](#) the sensitivity of the results to the age line chosen to define premature mortality (set at 75 years). I consider alternative age lines of 60, 70, and 75 years and observe that, overall, the higher the age line, the lower the gender ratio. This tendency is a consequence of the higher men's mortality rates in the retirement ages (above 65 years generally). With lower age lines (60 and 70), the ratios are very often above 1 indicating the relative advantage of men over women. The gender-balanced deprivation rate is revealed with the age line of 75 which is close to the average life expectancy in the USA (76.5). It is important to emphasize that in all racial groups whatever the age line considered, the gender ratio with income poverty is always over-estimated as compared to that of total deprivation.

Moving on to racial differences in gender inequalities, two main facts are observed: the gap between Minorities and Whites NH narrows with lower age lines (1), regardless of the age line women relative deprivation is the highest in the Hispanic group(2). With the age line

²⁸The HCR will yield the same gender ratio as the GDI if the weight is below 0.1. This weight value is unlikely

Figure 11: Age line and GDI gender ratios



Note: This figure reports GDI gender ratios using different age lines. These ratios are compared to the HCR's ratio. Recall: The age line considered in our analysis were 75

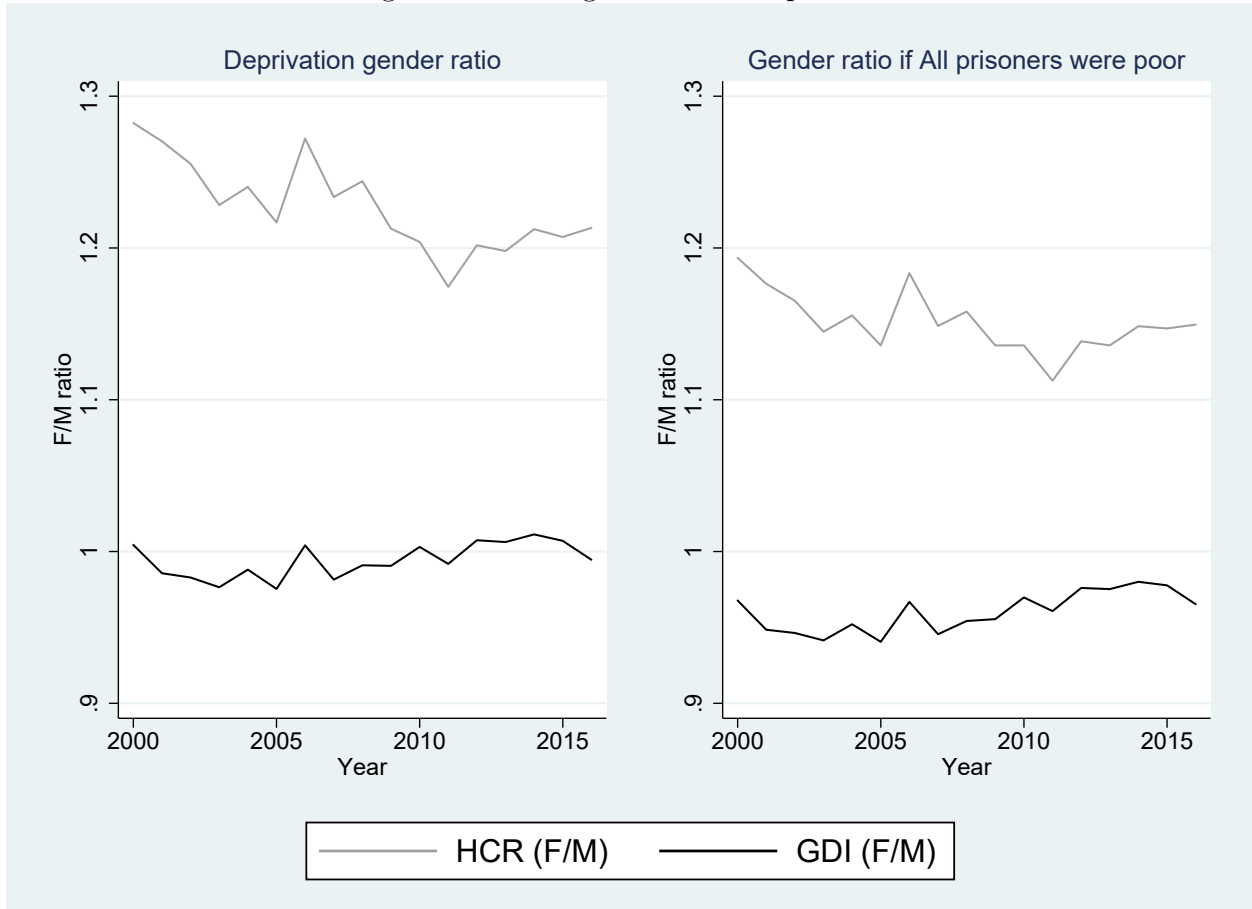
of 60 years, Whites NH women become more deprived than men with ratios close to those observed in the group of Blacks²⁹. Since I believe that in developed countries, not living the retirement period (generally above 60 years) should be considered as deprivation (age line above 60), the relative position of women is always worse in the Minorities compared to the Majority group.

4.3 Taking into account prisoners

It should be noted that in the US, some individuals like soldiers, prisoners, and people in college dormitories are not included the poverty surveys. Prisoners constitute the largest group excluded in the poverty universe. A recent paper of [Looney & Turner \(2018\)](#) showed that poor and jobless individuals were more likely to be incarcerated in the United States.

²⁹Note that with age line of 50, the race ranking about gender differences is the same for both GDI and HCR.

Figure 12: Taking into account prisoners



Note: The first figure (left) displays the current deprivation gender ratio (Female/male). The second presents how could be the gender ratio if all prisoners (males and females) were considered as being poor.

Data are reported from 2000 due to unavailability of prisoners' data.

Source: Bureau of Justice Statistics (2017, <https://www.bjs.gov/index.cfm?ty=dcdetail&iid=269> and IPUMS CPS

For instance, only 49% of men in prison were employed three years prior to the incarceration and their median income (USD 6250) was largely below the full-time minimum wage (USD 15000). Based on this evidence, I hypothesize that all prisoners are poor and observe how the gender difference behave. Given the gender distribution of incarcerated population, the deprivation rate among men is likely to increase more than the women's rate. In fact, more than 6% of the living male population is in prison while this share represents less than 1% for females (see Figure 14).

Figure 12 reports the gender ratios based on this hypothesis and shows a marked reduction of gender difference based on HCR (the ratio is close to 1). The effect on the GDI ratio is more nuanced, but we observe that from 2000 all the ratios fall below 1; men being considered as more deprived than women. This pattern is also observed in the group of

Whites NH and Blacks while for Hispanics, females are still more deprived than males (see [Figure 15](#))³⁰. Furthermore, it follows from [Figure 15](#) in the Appendix that women in the Majority group remain in a better relative position than those in Minorities.

4.4 Alternative measures of poverty

The most challenging limit of these analyses is the fact that the current poverty measure does not take into account intra-household inequality in resource distribution, and as a consequence, poverty rates are misreported ([Cherchye et al., 2012](#) and [Ponthieux & Meurs, 2015](#)). In a literature review exercise, [Ponthieux & Meurs \(2015\)](#) showed that generally in all OECD countries, married men's poverty rates were always over-estimated, whereas women's rates were under-estimated when one considers that resources are equally distributed inside the household. To better measure individual poverty, [Cherchye et al. \(2012\)](#) exploited information on consumption of private³¹ and public goods within the household to compare the poverty indices (for the elderly couples) calculated using the collective consumption model³² and the traditional approach (with the standard equivalence of scale). The main finding was that in the majority of cases, poverty with the traditional approach was under-estimated compared to the collective approach for the widowers who are more exposed to poverty.

Having no information on the pattern expenditure in the households, I rely on "the second-best" solution proposed [Corsi et al. \(2016\)](#). In facts, these authors computed the individualized financial dependency rates (FDR) in Europe by considering an individual as poor if his income is below the poverty line. In other words, the FDR represents the proportion of individuals whose personal income is below the poverty threshold. The absence of sharing rules and economy of scales in the FDR will lead to an over-estimation of women's poverty given that sharing should enhance their situation ([Cherchye et al., 2012](#))³³. As a consequence, the FDR will provide an upper bound value of the gender gap whereas HCR gives the lower bound; the real gap being between the HCR and FDR ratios. I compute FDR for individuals whose personal income is recorded (available continuously from 1962 in IPUMS CPS). In this regard, children under 15 years are excluded in the following analysis³⁴. Besides, the income line I consider to define financial dependence status is the official

³⁰The unequal distribution of prison population (dominated by black) is responsible for the heterogeneous effect of this hypothesis on different racial groups

³¹Expenditure on private good depends on sharing rules and economy of scale inside the household

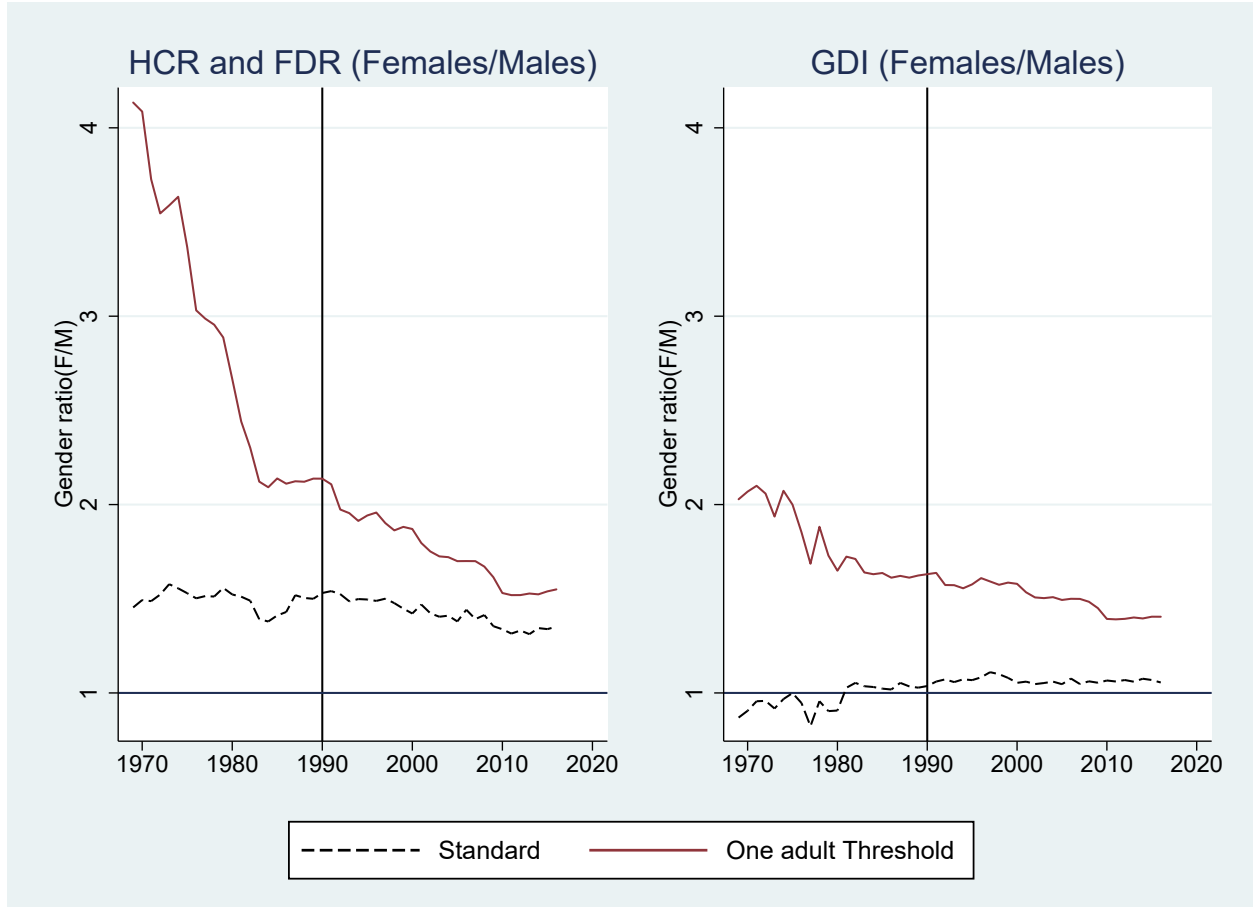
³²This model takes into account individual preference and the sharing rules that dictate intra-household distribution of resources

³³Due to the fact that women have lower personal income than men

³⁴Excluding children from the analysis should not bias the results assuming the same share of males and females (in the group of children under 15)

threshold for the household of one member³⁵.

Figure 13: Financial Dependency Rate (FDR) and GDI



Note: The first figure (left) displays deprivation gender ratio (Female/male) using alternative poverty measures. The right figure add lifespan deprivation to compute GDI based on these alternative poverty indices. Only individuals with age higher than 14 are considered in this analysis

Two sets of information emerge from [Figure 13](#). First, the gender gap is generally high with FDRs as compared to standard poverty measure implying that gender ratios are underestimated with the traditional HCR. Second, when the lifespan component is added, women are always more deprived than men if we rely on alternative poverty measures. Nevertheless, as stated previously, gender ratios with the total deprivation are always lower than the ones found when considering income poverty uniquely regardless of the poverty measure. The nuance that should be stressed here is that the real gender ratios are between the dotted curves (standard poverty definition) and the maroon curve (threshold for household of one adult). In summary, [Figure 13](#) strengthens and shades the previous conclusion: In the United States, with total deprivation, women are still more deprived than men but the gender bias

³⁵I check here whether individual would be poor if he was living alone, having the same income

is less severe than the one estimated with income poverty only.

Regarding the racial differences, [Figure 16](#) in the Appendix shows that with the alternative measure, as for income poverty, women in Minorities are in a better relative position in terms of total deprivation compared to those in the Majority group. The evolution of the family structure may explain the difference between standard and alternative deprivation measures. In fact, the bias with the standard poverty measure should be greater for Whites NH since the large share of women in this group live in couples while those in Minorities present higher rates of single parenthood ([Iceland, 2006](#)). Notwithstanding this nuance, my conclusions regarding the situation of women in Minorities still hold for two reasons. First, as mentioned earlier, the alternative approach overestimates women’s poverty given the absence of sharing in the household that might benefit more for Whites NH women, since they have more relative bargaining power. Second, the racial differences in deprivation rates are still alarming, and this reflects the hardships experienced by women in Minorities.

5 Concluding remarks

The main objective of this paper was to draw a picture of the gendered pattern of the total deprivation in the United States. In this regard, I used the generated deprivation index, an indicator that combines poverty and premature mortality as components of total deprivation in a consistent, simple and meaningful way; without relying on a particular representation of preferences ([Baland et al., 2021](#)). This indicator is best suited for making gender comparisons regarding the total deprivation in the US since poverty and mortality yield opposite trends of the gender gap: women are poorer and have lower mortality rates than men.

The contribution of this paper is twofold. First, from 1970 to 1990, American men were more deprived than women, but since the 1990s, males’ and females’ deprivation have evolved closely. Before 1990, the larger reduction in the gender gap in mortality along with the lack of significant progress in gender disparity in income poverty resulted in a greater decline in total deprivation among men. Since the 1990s, there has been an almost perfect compensation process across gender between lifespan and income deprivation, so that the gap between men and women has been almost filled.

The second contribution is that, this near gender equality in total deprivation hides important cross races differences: recent trend shows that the gender gap against women is the highest in Hispanic and Black groups (Minorities) as compared to Whites Non-Hispanics (Majority). Over time, men from Minorities have experienced a sharp decrease in racial gaps in the lifespan deprivation compared to women. This finding implies that Hispanic and Black women accumulate the double disadvantage of being females and in minority in a non-additive fashion. Note that the picture is reversed if only economic poverty was considered:

the majority group exhibits the highest gender gap.

Furthermore, I provide some sensibility analysis and show that the main conclusions are robust to the choice of age line³⁶ and the relative weight³⁷. I discuss two issues regarding measurement errors of poverty in the US. First, prisoners are excluded from the poverty universe. If I consider that all prisoners are poor, males' deprivation increases more than that of females. Consequently, the gender difference declines while the racial difference gets larger since Minority men are more likely to be incarcerated. Second, the standard poverty measure considers that resources are equally shared within the household and this leads to an underestimation of women's poverty. Assuming that only personal income matters in defining poverty status, I provide an upper bound of the gender gap³⁸. With this assumption, the gender difference seems to be more concerning in the Majority group compared to the Minorities. Nevertheless, women in Minorities experience important hardship since racial gaps are still alarming.

This paper has two implications. First, development policies that aim to reduce gender inequalities should prioritize targeting women in Minorities, as they are the most vulnerable when combining income poverty and premature mortality in a single indicator. Second, considering the recent stagnation in terms of mortality reduction, the trend of gender differences in total deprivation will be entirely dictated by the gap in terms of economic poverty. Therefore, efforts should be made to structurally reduce the income gap between men and women to achieve gender equality in total deprivation.

³⁶In the analysis, I considered an individual as lifespan deprived if his death occurred before 75 years. With the age lines of 60 and 70 years, the main results still hold.

³⁷Being more conservative, I considered that being lifespan deprived was as detrimental as being income deprived.

³⁸In this approach, there is no sharing within the households. The literature shows that sharing is generally in favor of women.

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Table 3: average annual variation of indicators, percentage points

	HCR	AD
All	0.025	0.041**
Male	0.031*	0.049**
Female	0.019	0.031*
Female-Male	-0.011**	-0.018**

This table report the coefficients of the regression of each indicator on the year. **/* next to the coefficient means significant at 1/5%

Figure 14: Prisoner Population



Note:

This figure displays the share of prisoners among men and men. Data are reported from 2000 due to unavailability of prisoners' data

Source: Bureau of Justice Statistics (2017) and IPUMS CPS

Table 4: Gender Gap by race

Gender Gap (F-M)	All	Whites NH	Blacks	Hispanics
Averages (and Std. Dev.)				
AD	3.20 (0.47)	2.37 (0.33)	5.65 (1.59)	4.77 (0.93)
LD	-3.30 (0.53)	-3.12 (0.30)	-4.95 (1.25)	-3.31 (1.20)
GDI	-0.10 (0.31)	-0.75 (0.24)	0.70 (0.62)	1.47 (0.88)
HCR	2.94 (0.42)	2.23 (0.32)	4.79 (1.33)	4.18 (0.74)
Annual Variation (pp)				
AD	-0.05**	-0.03**	-0.18**	-0.09**
LD	0.06**	0.03**	0.14**	0.13**
GDI	0.01	0.00	-0.04**	0.05*
HCR	-0.04**	-0.03**	-0.15**	-0.05**

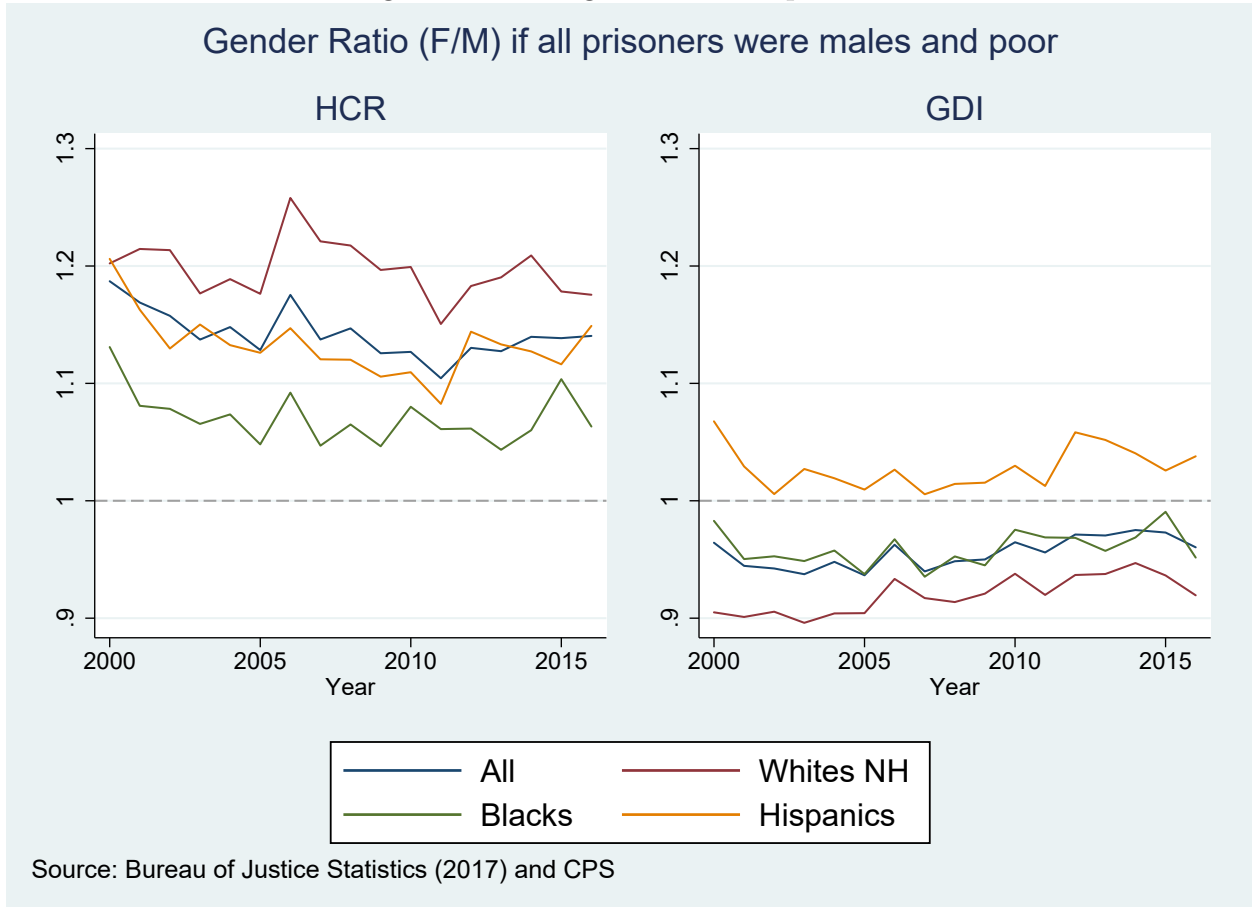
This table reports the average gender gaps (Females'-Males') in each racial group in percentage points (pp) from 1990 to 2016, and the coefficients of the regression of the gap in each indicator on the year. Standard Deviations in parentheses, **/* next to the coefficient means significant at 1/5%

Table 5: Racial Gap by gender group (percentage points)

Racial Gap	Blacks-WNH			Hispanics-WNH			Blacks-Hispanics		
	All	Males	Females	All	Males	Females	All	Males	Females
Averages (and Std. Dev.)									
AD	15.80 (2.41)	14.01 (1.88)	17.29 (2.96)	14.69 (2.47)	13.51 (2.24)	15.92 (2.72)	1.11 (1.40)	0.49 (1.32)	1.37 (1.64)
LD	3.78 (1.43)	4.73 (1.90)	2.90 (0.97)	-0.44 (1.61)	-0.42 (2.01)	-0.60 (1.12)	4.22 (0.56)	5.15 (0.66)	3.51 (0.45)
GDI	19.57 (3.67)	18.74 (3.52)	20.19 (3.80)	14.25 (3.62)	13.09 (3.74)	15.31 (3.48)	5.33 (1.21)	5.64 (1.19)	4.88 (1.44)
HCR	17.91 (3.10)	16.42 (2.66)	18.98 (3.48)	15.53 (2.89)	14.55 (2.75)	16.50 (3.01)	2.37 (1.48)	1.87 (1.39)	2.48 (1.72)
Annual Variation (pp)									
AD	-0.22**	-0.14**	-0.30**	-0.20**	-0.17**	-0.23**	-0.03	0.02	-0.07
LD	-0.18**	-0.23**	-0.12**	-0.18**	-0.23**	-0.13**	0.00	-0.01	0.01
GDI	-0.40**	-0.38**	-0.42**	-0.38**	-0.39**	-0.35**	-0.02	0.02	-0.07
HCR	-0.31**	-0.24**	-0.36**	-0.26**	-0.24**	-0.27**	-0.05	0.01	-0.09*

Note: This table displays the racial gap in each gender. The first six columns compare Blacks and Hispanics males and females to Whites NH, while the three last compare Hispanic and Blacks. The second part of the table presents coefficients of an OLS regression of the racial gap in each indicator on year. We say for instance that between 1990 and 2016, the Alive Deprivation gap between Blacks and Whites NH men decreased by 0.14pp on average each year. Standard Deviations in parentheses, */** means significant at 5%/1%

Figure 15: Taking into account prisoners



Note: These figure display deprivation (HCR and GDI) gender ratio (Female/male) by race if all prisoners were considered as being poor and males. The existing data do not provide gender distribution of prison population by race.

Source: Source: Bureau of Justice Statistics (2017) and IPUMS CPS

Figure 16: GDI Gender Ratios (F/M) by race with alternative poverty measures



Note: These figures display total deprivation (GDI) gender ratios by race using alternative poverty measures. Data are reported from 2000 due to unavailability of income data