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## Rising Income Inequality Through a Disability Lens: Trends in the United States 1981–2018

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### Abstract

**Objectives:** In a context of rising income inequality and policies to improve rights and inclusion for persons with disabilities, this paper examines income inequality trends by household work limitation status in the United States from 1981–2018.

**Methods:** Data comes from the March Supplement of the Current Population Survey using the work limitation disability measure to estimate decomposable Generalized Entropy measures of income inequality, and progressivity of government transfers and disability payments.

**Results:** Over the 1981–2018 period, inequality within the group of households with work limitations has been around 30 percent higher than inequality within the group of households without work limitations. Both households with and without work limitations have seen a similar 70 percent rise in income inequality since 1981. Progressivity of government transfers and disability payments increased among households with limitations, but not among other households.

**Conclusions:** Income inequality is higher within the group of households with work limitations compared to other households and has been rising for both groups. Policies aimed to enhance the economic and social participation of persons with disabilities over this period may have mitigated this rising trend. Disability considerations should be part of research and policy on income inequality.

### Keywords

Generalized Entropy; Inequality; Transfer payments; Disability

## 1 Introduction

Rising income inequality in the United States has received much attention in scholarly circles and more recently with the general public. A large literature has developed on rising vertical inequality, i.e. changes in the distribution of incomes of individuals or families. It documents the fall in relative income at the bottom of the distribution while income at the

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top of the distribution has pulled further away from the median (e.g. Autor et al. 2008; Piketty and Saez 2003). There has been much less attention to horizontal inequality, i.e. inequality between groups, except for studies on trends in inequality of labor market outcomes by gender, education and/or race-ethnicity (Blau and Kahn 2007; Canelas and Gisselquist 2019).

Notably absent from existing analyses of inequality are persons and households with disabilities, that often experience economic disadvantages. The U.S. Social Security Administration (SSA) estimates that approximately one in four young labor market entrants will experience disability at some point in his/her working career (Social Security Administration 2018). Survey-based estimates including temporary reports suggest about half of the U.S. population experiences a work-limiting disability during their working-age years (Laditka and Laditka 2018; Meyer and Mok 2019). As life expectancy increases, some evidence also suggests people may spend more time with functional limitations, or disability (Kassebaum et al. 2016). On average, persons with disabilities tend to experience lower socioeconomic status, as indicated by lower income, earnings, educational attainment, and employment, along with higher poverty (Brucker et al. 2015; Lauer and Houtenville 2017; Meyer and Mok 2019; Ryan and Bauman 2016; She and Livermore 2007).

To our knowledge, this paper is the first to start addressing this gap by studying trends in income inequality across and within disability status. We primarily rely on the Generalized Entropy (GE) class of inequality indices in lieu of a more common Gini Index due to decomposition properties of the former<sup>1</sup> and its intuitive appeal. It represents essentially how surprised we should be to find unequal distributions if the process generating the distribution were equal. Additionally, this study covers the changing roles of disability programs as they relate to such trends using measures of progressivity (i.e. whether benefits flow disproportionately to worse-off or better-off individuals) that compare income distributions before and after key transfers. In this context, we attempt to answer three research questions: (1) Has income inequality within households with or without a work limitation changed over time? (2) Has income inequality between households with and without a work limitation changed over time? (3) How have government transfers or disability payments contributed to these inequality trends?

Decomposable GE inequality indexes and progressivity measures of government transfers and disability payments are estimated using data from the March supplement of the Current Population Survey (CPS) from 1981 to 2018. We hypothesize that households with work limitations likely experienced increasing income inequality. Expected trends in inequality between households with and without disability are less clear. Changes in the disability policy environment with the enactment of the Americans with Disabilities Act (ADA) in 1990, along with the increasing size of the Social Security Disability Insurance (SSDI) program (Autor and Duggan 2003, 2006) may improve economic and social inclusion, translating into rising progressivity of government transfers and less inequality between

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<sup>1</sup>Generalized Entropy (GE) indices are additively decomposable meaning the overall index may be decomposed into a sum of the inequality within each subpopulation and the inequality between subpopulations. The Gini coefficient does not have this property (Shorrocks 1984).

groups. At the same time, a downward trend in the employment rate of persons with work limitations in the 1990s (Autor and Duggan 2003; Burkhauser et al. 2002) could contribute to increased inequality between groups.

The remainder of this paper is organized into four sections. The next section provides background information on how socioeconomic status and inequality may relate with disability, as well as contextual information on relevant public policies. Section three discusses the data and methods used to address our research questions. Section four presents results for inequality within and between subpopulations over the past 38 years, as well as summary measures for progressivity of government transfers and disability payments in particular. The final section discusses these results and concludes.

## 2 Socioeconomic Status, Inequality, Public Policy and Disability

### 2.1 Socioeconomic Status and Disability

Previous research consistently identifies a variety of economic disadvantages associated with disability that increase the probability an individual (or household) would have lower socioeconomic status. For example, according to U.S. Census data, approximately 40 percent of the population with disabilities had attended some college, while that statistic is around 60 percent for persons without disabilities. Nearly 35 percent of the population without disabilities earn at least a Bachelor's degree, while only 17 percent of individuals with disabilities achieve that same degree (Ryan and Bauman 2016). Survey-based research also corroborates these statistics (Kavanagh et al. 2015; Meyer and Mok 2019).

Disability is difficult to define and measure. In the U.S., empirical research has often measured it as a self-reported limitation in engaging in the labor market due to an impairment or health condition (Brucker et al. 2015; Laditka and Laditka 2018; Meyer and Mok 2019). With such a measure, it is unsurprising to find significantly lower employment and labor force participation in this population that may also decrease socioeconomic status. As of 2015, approximately 35 percent of persons with disabilities were employed relative to 76 percent of the population without disabilities (Lauer and Houtenville 2017). While workers may be discouraged from entering or staying in the labor market because SSDI is available (Autor and Duggan 2003; Burkhauser and Stapleton 2004; Maestas et al. 2013), workers with disabilities may also face discrimination in the labor market (Ameri et al. 2018).

Lower earnings and income are also observed on average for persons with disabilities, directly impacting socioeconomic status. Among those engaging in the labor market, wage offers can be lower (Mann and Wittenburg 2015), social capital may be more limited (Langford et al. 2013), and once employed, the risk of job termination can be higher (Mitra and Kruse 2016). Median earnings in 2015 for persons without disabilities were close to \$32,000, while persons with disabilities at the median earned over \$10,000 less (Lauer and Houtenville 2017). Lower income on average is also observed and may be a protracted event (Meyer and Mok 2019). For example, Meyer and Mok (2019) uncover statistically lower earnings prior to disability onset that persist up to ten years later. On average, earnings are 25 percent lower and income (post-transfer) is nine percent lower ten years after onset

relative to more than five years preceding disability onset (Meyer and Mok 2019). Part of the earnings differential has been attributed to differences in productivity; however, it is important to note that studies find residual wage gaps suggesting potential discrimination in labor markets (Baldwin and Choe 2014; Kruse et al. 2018). Discrimination in other arenas, such as education, housing, or family life, may also play an important role, but we are focused in this paper on the outcomes of these many processes, as opposed to root causes. Finally, lower socioeconomic status on average for the population with disabilities is most acutely manifested by a higher incidence of poverty (Brucker et al. 2015; She and Livermore 2007).

## 2.2 Inequality and Disability

Inequality in the United States has been rising in recent decades. While the 1980s observed increasing inequality in both the top and bottom of the distribution, in the 1990s the pattern diverged. The top portion of the distribution experienced continued widening of inequality, while bottom distribution inequality appeared to stagnate (Autor et al. 2008). Lemieux (2006) suggests postsecondary education may play a role. Within this context, households with disabilities may experience the rise in inequality differently due to differences in observed socioeconomic characteristics and employment for the population on average.

A priori, there are factors that may be associated with higher or lower levels of inequality relative to households without disabilities. On the one hand, lower average socioeconomic status (Brucker et al. 2015; Meyer and Mok 2019), coupled with distribution top-heavy inequality (Autor et al. 2008; Piketty and Saez 2003), could suggest lower inequality for those with disabilities in recent years. On the other hand, there is also significant heterogeneity of outcomes within the population itself which could lead to higher inequality. For example, ten years after onset, while an average male with a work limiting disability experiences a decline in income of about nine percent, those with chronic and severe conditions experience around a 28 percent drop, and those with a single report of work-limiting disability do not experience a statistical decrease in income (Meyer and Mok 2019). In Census data, Brault (2008) reports the poverty rate for those with severe disabilities to be more than double the rate for persons with non-severe disabilities: 27 percent versus 12 percent respectively (Brault 2008). Persons with hearing or vision limitations experience higher employment levels (51 percent and 41.8 percent respectively) than those with ambulatory or cognitive limitations (24.1 percent and 25.5 percent) or self-care and independent-living limitations (15.6 percent and 16.4 percent) (Lauer and Houtenville 2017). Higher levels of inequality within the group may be due to unobserved heterogeneity in health conditions and impairments.

## 2.3 The Role of Public Policy

Policies may also differentially contribute to inequality trends over time for the population with disabilities. Employment trends suggest that persons with disabilities have experienced declining rates of employment especially in the 1990s (Burkhauser et al. 2002; Burkhauser and Stapleton 2004; Houtenville et al. 2014; Kraus et al. 2018), which could widen disparities both within households with disabilities and between households with and without disabilities. Some research suggests the decline in employment could be in part

attributable to employer costs associated with the ADA (Acemoglu and Angrist 2001), while another study suggests this may not be the case (Ameri et al. 2018). Alternatively, disincentives to work associated with SSDI could help account for falling employment (Autor and Duggan 2003; Burkhauser and Stapleton 2004; Maestas et al. 2013). Growing inequality that is concentrated at the top (Autor et al. 2008) could also contribute to rising inequality between groups. Finally, rising inequality coupled with high levels of heterogeneity among persons with disabilities could also contribute to rising inequality within the population.

Conversely, the educational attainment gap appears to have declined between 1981–1999 (Horvath-Rose et al. 2004), and the prevalence of work-limiting disability reports appears relatively stable over time (Houtenville et al. 2014), or possibly declining, among younger populations (Horvath-Rose et al. 2004). Research also suggests that social programs aimed at assisting individuals with work-limiting disability, such as SSDI, have grown especially since 1984 due to relaxation of eligibility requirements (Autor and Duggan 2003, 2006). Autor and Duggan (2006) estimate that in 2006 approximately 4.1 percent of the population received SSDI versus 2.2 percent in 1984. Between 1989 and 2009, real benefit expenditures tripled and Medicare expenditures more than tripled (Autor 2011), which could offset rising inequality. Similarly, new research suggests recent birth cohorts may begin receipt of SSDI on average at younger ages (Ben-Shalom et al. 2017). Autor and Duggan (2003) also point out that the formula for disability benefits itself should mitigate rising inequality. From their Table 1, growth in benefits appears to be strongest at the bottom of the distribution, and because benefits are indexed to average (mean) income, rising mean income could decrease inequality for this population (Autor and Duggan 2003). Finally, recent research on the benefit side of SSDI suggests this program may causally impact health through decreased mortality and may decrease the incidence of financial distress (Deshpande et al. 2019; Gelber et al. 2018) suggesting that relaxed eligibility and changing progressivity of the benefit formula (Autor and Duggan 2003) could reduce socioeconomic inequality between households with and without disabilities. However, these recent findings are based on regression discontinuity approaches that may not generalize to the population.

Therefore, households with disabilities likely had a different experience of rising income inequality in the United States over the last few decades; however, understanding exactly how the experience differed remains an empirical question. To our knowledge, this paper is the first analysis to explore this question. On net, we expect to find high levels of inequality over time consistent with overall national trends. We hypothesize that increases in inequality within the subpopulation of households with disabilities will rise over time but that government transfers, and disability payments in particular, might mitigate rising inequality. Relative to households without disabilities, trend growth in inequality within the subpopulation should be lower for households with disabilities due to concentrated inequality growth at the top of the income distribution (Autor et al. 2008) and increased progressivity of benefits (Autor and Duggan 2003). However, declining employment (Burkhauser et al. 2002; Burkhauser and Stapleton 2004; Houtenville et al. 2014; Kraus et al. 2018) could suggest a more rapid pace of inequality growth for households with disabilities. Trends in inequality between these subpopulations are also ambiguous. Concentrated inequality growth at the top of the income distribution (Autor et al. 2008) and

declining employment (Burkhauser et al. 2002; Burkhauser and Stapleton 2004; Houtenville et al. 2014; Kraus et al. 2018) should widen disparities, yet improved progressivity of the benefit formula due to rising inequality (Autor and Duggan 2003) should close the gap.

### 3 Data and Methods

Data for this study comes from the March Supplement of the Current Population Survey (CPS) from 1981 to 2018. The population of households each year is divided into mutually exclusive groups of households where at least one member reports a disability, and households where no one reports a disability. The main population partition is whether there is a work-limited individual residing in the household. The work limitation question reads, “Does ... have a health problem or a disability which prevents work or which limits the kind or amount of work?” When this is answered in the affirmative for any individual 15 years of age or older, the household in which the individual resides is classified as work-limited. As some research has expressed concern over the use of a work limitation measure (Black et al. 2017; Hale 2001; Van Soest et al. 2011), we also consider a second partition of the population based on reported functional limitations as data permits (2009–2018). In this partition, households are coded with functional limitations if at least one member reports hearing, vision, cognitive, ambulatory, self-care, or independent living limitations. It should be noted that these are two distinct proxies for disability and households identified as limited in one partition are not necessarily limited in the other partition. We primarily rely on the work limitation measure as it is available for a longer period to study the trends in inequality; however, we consider the functional limitation partition in the discussion and include figures in the appendix for interested readers.

Aging can lead to both disability and withdrawal from the labor market, therefore we restrict the sample to households in which at least one member is between the ages of 15 and 62 to help control for heterogeneity and age bias for households. This essentially excludes households without a traditional potential working-age member. The years 1981 to 2018 are used given data availability: 1981 is when work limitation questions were included in the March CPS. Personal income values that are topcoded from 1981–2010 are revised with values from the Census Bureau’s Demographic Extract Files: Income Data Files, which implements topcode proximity swapping to maintain relative consistency with the 2011–2018 data while preserving the distribution above the topcode value. The final sample size consists of over two million households from the 38-year period.

Overall trends in inequality are documented within the two groups of interest (households with and without limitations) and estimates are weighted with the March Household Supplement Weight. There are many metrics for measuring overall inequality in a population, one of the most known metrics is the Gini Coefficient. However, the Gini is not additively decomposable by subpopulations (Shorrocks 1984), making it less desirable for this particular application. An alternative family of indices are those of the General Entropy (GE) class. These indices are additively decomposable by subpopulations (Shorrocks 1984), making them ideal for this application to study both within and between subpopulation trends in inequality. More specifically, this study estimates  $GE(\alpha)$  measures with  $\alpha$  ranging from zero to two. Higher values of  $\alpha$  emphasize changes at the top of the distribution, while



lower values are more sensitive to the bottom of the distribution (Cowell and Jenkins 1995). Due to the high prevalence of persons and households with work limitations towards the bottom of the distribution, we place a special emphasis on the GE(0) measure and include analyses using alternative alpha values in the Appendix<sup>2</sup>. Following Shorrocks (1984) and Cowell and Jenkins (1995), Generalized Entropy is defined as follows:

$$GE(\alpha) = \frac{1}{N} \frac{1}{\alpha(\alpha-1)} \sum_{i=1}^N \left( \left( \frac{y_i}{\mu} \right)^\alpha - 1 \right) \quad \alpha \neq 0, 1 \quad (1)$$

where  $y_i$  is a household's income,  $N$  is the population size and  $\mu$  is the population's mean income. In the case where  $\alpha = 0$ :

$$GE(0) = \frac{1}{N} \sum_{i=1}^N \ln \frac{\mu}{y_i} \quad (2)$$

Populations are weighted according to:

$$w_k = (v_k)^\alpha (u_k)^{1-\alpha} \quad (3)$$

where  $v$  is the income share of group  $k$ , and  $u$  is the population share of group  $k$ . Inequality between groups is calculated using group-mean income. Therefore, the decomposition of total inequality in the population with  $\alpha = 0$  by households with and without work limitations takes the following form:

$$GE(0)_{TP} = \frac{u_{NL}}{N_{NL}} \sum_{i=1}^{N_{NL}} \left( \ln \frac{\mu_{NL}}{y_{i,NL}} \right) + \frac{u_L}{N_L} \sum_{i=1}^{N_L} \left( \ln \frac{\mu_L}{y_{i,L}} \right) + \frac{1}{N_{TP}} \left[ N_{NL} \left( \ln \frac{\mu_{TP}}{\mu_{NL}} \right) + N_L \left( \ln \frac{\mu_{TP}}{\mu_L} \right) \right] \quad (4)$$

This methodology requires semi-homogenous, mutually exclusive subpopulations. "TP" is the total population's inequality estimate, and subscripts "NL" and "L" in equation (4) represent the subpopulation without and with work limitations respectively.

The analysis of the progressivity of benefits focuses on the redistributive effect of benefits (Lambert 1985). A simple measure of progressivity considers the differences in inequality indexes along the lines of Musgrave and Thin (1948) and Lambert (1985) as in equation (5).  $I_{bb}$  represents estimated inequality before benefits (reported household income without reported benefits), and  $I_{ab}$  represents inequality after benefits (reported total household income). While these measures do not take into consideration a counterfactual of labor supply in the absence of benefits, it gives a rough estimate of how inequality in the income distribution changes if one excludes benefits, all else equal.

<sup>2</sup>Larrimore (2014) also suggests that GE(0) measures have an advantage in observing changes in distributions due to transfers particularly because of their bottom-distribution focus.

$$\text{Progressivity} = I_{bb} - I_{ab} \quad (5)$$

The first measure of progressivity considers the difference in estimated inequality of household income net of government transfers (household total unemployment compensation, workmen's compensation, Social Security, Supplemental Security Income, Public Assistance and Welfare, and Veteran's Benefits) and total household income. Under certain circumstances, Survivor's Benefits, disability income and education income also originate from the public sector; however, portions of these income sources may be private in nature and are therefore excluded from "government transfers". The second case of distributional changes is the difference between measured inequality of household income net of disability payments and total household income. CPS began recording the reason for receiving various payments such as Social Security or Veteran's Benefits at the individual level in 2001, with disability as one of the reasons an individual may receive these payments. Therefore, the progressivity of disability payments is only estimated from 2001–2018. For each household in this period, all individual reported Social Security, Supplemental Security Income, Veteran's Benefits, disability income (which can include private disability insurance, company or union disability, or disability payments from the federal, state or local government level), and other income received due to disability is aggregated at the household level. While some income sources such as Veteran's Benefits or Social Security are often received for multiple reasons, it is not feasible to disaggregate the amount received by a specific reason (i.e. disability). Therefore, for the purposes of this analysis, if any portion of Social Security benefits or Veteran's Benefits are due to disability, the entire sum is assumed to represent a "disability payment", although this could potentially overstate the level of disability payments. Ordinary Least Squares (OLS) linear regressions of the variable of interest on year tests statistical significance of inequality and progressivity trends over time.

## 4 Results

### 4.1 Descriptive Statistics

Figure 1 highlights the prevalence of households with disabilities over the study period. Each year 13–17 percent of households with at least one member under age 62 contain at least one work-limited member. With the exception of the final few years, the prevalence of work-limited households is fairly steady. In later years when functional limitations are available, prevalence appears steady including the final few years. The increase in prevalence of work-limited households in the last few years may be due to a change in the survey questionnaire in 2014, rather than an actual increase in prevalence<sup>3</sup>.

<sup>3</sup>The "traditional" work limitation question reads, "(Do you/Does anyone in the household) have a health problem or disability which prevents (you/they) from working or which limits the kind or amount of work (you/they) can do?" However, the redesigned question from 2014 reads, "At any time in 2013 (did you/did anyone in the household) have a disability or health problem which prevented (you/they) from working, even for a short time, or which limited the work (you/they) could do?" Approximately 70 percent of the 2014 sample followed the traditional questionnaire, and the prevalence of work limitations at the household level was 15.5 percent. Among households using the redesigned questionnaire, the prevalence of work limitations was approximately 16.6 percent. All households answered the redesigned question from 2015 onwards, with household prevalence rates of approximately 16.5 percent relative to prevalence rates around 15 percent prior to the change.



Over the last 38 years, approximately 53,000 households are interviewed in the March CPS annually. Of these, 14.4 percent on average are identified as work-limited on an annual basis<sup>4</sup>. About 70 percent of work-limited households received some form of government transfers compared to around 20 percent of non-limited households over this time frame. In the last 18 years, when disability payments are available, the data used in this study indicates it is rare for a non-limited household to receive disability payments as defined here, with no more than three percent of such households without limitations receiving any disability payments<sup>5</sup> versus about 57 percent of work-limited households who receive such benefits annually (see Appendix table A1).

## 4.2 Trends in Inequality and Benefit Progressivity

Figure 2 shows inequality trends as measured by GE(0), and visually suggests that inequality is rapidly increasing for the entire population as well as for both subgroups. Work-limited households consistently exhibit higher levels of inequality, which is also observed for other Generalized Entropy measures and the Gini Index (Appendix Figure A1). On average, over the study period, GE(0) is 30 percent higher among households with work limitations relative to households without limitations. Each of the linear trends are statistically significant, with linear trend increases in GE(0) inequality of 0.00676 (non-limited) and 0.00795 (limited). Since the GE(0) statistic range is from 0.32 to 0.57 (non-limited) and 0.42 to 0.77 (limited), the statistic value increases around one and a half percent per year. Over time, it creates a sizable trend, with the 2018 GE(0) inequality statistic 70 percent higher (non-limited) and 69 percent higher (limited) relative to the 1981 statistic. Inequality between the two subgroups also statistically continues to rise (Table 1), albeit at a relatively slow pace. Furthermore, the contribution of between-group inequality to total population inequality is consistently minor.

The left panel of Figure 3 shows that among households with work limitations, government transfers offset more inequality as measured by GE(0), and that the amount of inequality offset appears to increase over time. Meanwhile, there is a small decrease in progressivity of government transfers for households without limitations. Linear trends are statistically significant for both populations at any conventional level (Table 2). This suggests that government transfers may be increasingly mitigating inequality among work-limited households; while there is evidence to suggest that these benefits could offset less inequality over time among non-limited households. There appears to be a period of particularly high progressivity beginning around 2010, which could be due to the Great Recession. In 2016 dollars, average reported unemployment compensation for the total population was around \$600 in 2007–2008, while the same statistic was near or over \$2,000 in 2010–2011. Abnormally high government transfers (unemployment compensation) could contribute to uncharacteristically high estimates of progressivity at this time. If post-recession years are removed, progressivity generally declines for subpopulations, producing a more negative

<sup>4</sup>On average 15.5% of households are identified as work-limited in 2009–2018 annually, the time frame when functional limitations are also available. In this time frame, on average 15.5% of households are also identified with functional limitations annually.

<sup>5</sup>Two exceptions exist as evidenced by Appendix table A1: there were 3.2% and 3.4% of non-limited households reporting disability payments in 2016 and 2018 respectively.

trend in progressivity of government transfers among households without limitations and a more muted increase in progressivity among households with limitations.

The incidence of disability payments among households without reported work limitations is very low as noted previously. Therefore, results of disability payment progressivity focus exclusively on the subpopulation reporting work limitations. For this group, the right panel of Figure 3 shows a statistically significant positive trend in progressivity of disability payments, suggesting this particular transfer offsets more inequality in recent years relative to earlier years. These stated trends in government transfers and disability payments are mostly robust to various measures of inequality, including GE(1) and GE(2) indices. The only exception is the GE(2) measure, which also shows a mild increase in progressivity of government transfers for non-limited households as well.

The above results suggest higher levels of inequality among households with disabilities compared to other households regardless of the inequality measure used. There are two plausible sources of heterogeneity to explore that may be associated with such high levels of inequality. Under the definition used here, households identified as “work limited” have a member of any age (15+) reporting a limitation; however, it is reasonable to expect different outcomes depending on the age of the work-limited member. In particular, earnings and income disadvantages should be muted for households where the work-limited member is outside of typical working ages. Another potential source of high heterogeneity (and inequality) in the work-limited group is the quantity of work-limited members relative to the prime age population of the household. For example, a household with all potential earners reporting a work limitation will likely face different consequences compared to a household where there are two potential earners, and only one reports a work limitation.

When the work-limited subpopulation is partitioned by the age of the work-limited individual (working age defined as ages 21–61, versus non-working ages 15–20 and 62+), it is the work-limited households with a limited working-age member that is driving higher observed inequality (Figure 4). As expected, the non-working-age work-limited population behaves a bit more like the non-limited population, exhibiting even lower inequality than households without limitations. Furthermore, the increase in inequality over time also appears to be driven by the subpopulation of households where the limited member is also of working age (Table 1). The very low, and relatively stable, levels of inequality observed in the subgroup of limited households where all limited members are not of traditional working age could be due to more universal coverage in social pensions and/or a relatively small sample size. Progressivity of government transfers and disability payments among households with work limitations also seem to be driven by households with working-age members reporting limitations (Table 2).

Households where all working-age adults in the household report work limitations are also driving observed high inequality, increasing inequality over time, and rising progressivity in the larger subpopulation with limitations (Figure 5; Tables 1 and 2). On the one hand, this is surprising given that among households who report a work limitation, only about 30–40 percent of those classify as households where all prime age adults are work-limited (Appendix Table A1). On the other hand, we hypothesized that these households would face

greater consequences given the higher intensity of work limitations within the household. These households are also more likely to be single-person households. Over the sample period, about 48 percent of work-limited households with all adults reporting work limitations were single-person households, relative to about 19 percent of non-limited households.

## 5 Discussion

This study presents for the first time an analysis of trends in income inequality in the U.S. across disability status when disability is measured as work limitations at the household level. It has four main findings: (1) Income inequality has consistently been 30 percent higher within the group of households with work limitations in comparison with other households; (2) Income inequality for households with disabilities has increased since 1981; (3) between-group inequality has increased modestly over the last 38 years; (4) Policies aimed to enhance the economic and social participation of persons with disabilities over this period might to some extent have reduced this rising trend. We conduct below several analyses to further explain some of these findings, assess their robustness and highlight potential avenues for further research.

As noted briefly earlier, previous research has been critical of using a work limitation measure of disability (Black et al. 2017; Hale 2001; Van Soest et al. 2011). While an alternative measure is not available in earlier years for CPS, beginning in 2009 a functional limitations measure is available. Under this classification, individuals reporting hearing, vision, cognitive, ambulatory, self-care, or independent living limitations are identified as individuals with functional limitations. The households in which these individuals reside are then classified as a household with functional limitations. This functional limitation partition does not materially change the results and conclusions of this study (Figures A5 and A6 and Tables A3 and A4)<sup>6</sup>, which is consistent with previous research finding similar outcomes and consequences for persons with disabilities regardless of the measure of disability (Brucker et al. 2015; Burkhauser et al. 2002; Mitra et al. 2009; She and Livermore 2007). Given the similarities in previous research and the current study, one may extrapolate that trends observed with a work limitation partition over the full study period may be generalizable to households with disabilities. This conclusion should be tempered knowing that persons who experience work limitations or functional limitations do not necessarily experience both. However, when aggregated to the household and population level, there appears to be some similarities in identified trends in inequality and progressivity of government transfers and disability payments. Another caveat to this hypothesis is that it relies on only ten years of observation (which are all post Great Recession) and future research with more data may not come to this same conclusion.

Leaning on the benefits of a functional-limitation partition more, we can begin examination of the type of functional limitation present in the household. Previous research suggests

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<sup>6</sup>Levels and trends in inequality are particularly robust (see Appendix Figures A5 and A6 and Tables A3 and A4). While progressivity appears higher for the subpopulation of households with functional limitations, the data do not identify a statistically significant trend (Table A4) in contrast to the main results. Note however for trends in both Tables A3 and A4 there are limited observations to constitute a trend.

persons experiencing vision or hearing difficulties may experience more elevated employment rates relative to persons experiencing cognitive, ambulatory, self-care, or independent living limitations (Lauer and Houtenville 2017). While only about 15 percent of households identified with functional limitations experience only vision or hearing difficulties, inequality tends to be lower for these households, with some evidence of declining inequality over the short observation period (see Figure A7 and Appendix Tables A3 and A4). However, it is important to note the very limited time frame to capture trends, and the fact that all available data are post-Great Recession.

There are a few reasons to interpret the results on the progressivity of transfers with caution. This analysis does not take account of a fully realistic counterfactual in comparing distributions before and after benefits. Households and individuals make decisions about labor market participation based on the fact that government transfers and disability payments exist. SSDI in particular is known to have an employment disincentive effect particularly among younger workers causing decreased labor supply (Maestas et al. 2013). Therefore, the estimates presented here could overestimate inequality that would have existed hypothetically in an environment without benefits if persons with self-reported work limitations exit the labor market and receive a lower income than he/she otherwise would have earned if employed. Similarly, benefits tend to be underreported in surveys such as the CPS (Meyer et al. 2009). Parolin (2019) for example finds supplemental poverty measures in CPS would fall after accounting for underreporting key transfer programs. Underreporting of transfers in CPS may by extension also overestimate the level of inequality particularly among households with disabilities. Furthermore, it is important to bear in mind that inequality estimates themselves do not adequately describe the whole distribution. We elected to focus on the General Entropy measures due to decomposition properties; however, research shows that overall increases in inequality throughout the 1990s obscure relatively stagnant inequality among the bottom of the distribution coupled with continued widening disparities at the top (Autor et al. 2008). Finally, even within this analysis, we obtain slightly different trend results based on which inequality index is used (e.g. the GE(2) measure suggests a minor increase in progressivity of government transfers for households without work limitations, while other inequality measures suggest a decrease)<sup>7</sup>.

In addition, the last three decades have seen important policy changes toward the economic and social inclusion of persons with disabilities that could contribute to dampening inequality within and between disability subgroups. SSDI adopted broader definitions of disability with legislation in 1984 (Autor and Duggan 2003, 2006), and the ADA was adopted in 1990. Autor (2011) observes a remarkable increase in the SSDI outlays in recent years, while Autor and Duggan (2003) point out the formula for SSDI compensation should lead to lower inequality. However, concentrated increases in inequality particularly at the top of the distribution (Autor et al. 2008) coupled with high heterogeneity (e.g. Meyer & Mok

<sup>7</sup>A progressivity measure in the spirit of Kakwani (1977) also can produce slightly different results relative to the simple difference which is used here. While generally findings are robust to the choice of measure, there are a few exceptions. For example, non-work-limited households observe a slightly negative trend in progressivity when measured with the simple difference whereas with the Kakwani (1977) style measure there is a slight positive slope. When comparing work-limited households on the intensive margin, a simple difference measure of progressivity reveals observed trends are likely driven by households where all working-age members are work-limited. However, a Kakwani (1977) style measure suggests the opposite.

2018) and decreasing employment (Acemoglu and Angrist 2001; Autor and Duggan 2003) within the population with disabilities might have contributed to increasing inequality within and between groups by disability status. The results presented here coincide with both these narratives, highlighting an increase in progressivity of government transfers (and disability payments in particular) for households with work-limiting disability, while also finding rapidly rising inequality among these households. This suggests that in the absence of such policies and programs, which may have contributed to increasing progressivity from 1981–2018, inequality among households with work limitations may have been even higher than what we actually observe today (see Figure A8). Nevertheless, inequality between households with and without disabilities has not been eliminated.

These reported trends in inequality and progressivity of transfers within and between households with work limitations are a first step towards understanding inequality by disability, and lay the groundwork for future research. Going forward, more research on the determinants of high inequality among households with disabilities is warranted. There is a significant amount of heterogeneity present in households with disabilities that our investigation is unable to parse out. Administrative data on earnings and income together with applications and diagnoses (reasons for award or denial) from the Social Security Administration data might more effectively distinguish work limitation duration, severity and age at onset, which would help us understand the experience of heterogeneous subgroups among households with work limitations. Additionally, this analysis focuses on households, and makes no comment or reference to individual-level inequality. While some trends could hold, it remains an empirical question as to how the analysis would be different at the individual level. Furthermore, evidence from the Benefit Offset National Demonstration suggests that work-promoting policy changes can modestly reduce inequality among Disability Insurance beneficiaries (Geyer et al. 2018), which justifies additional policy research.

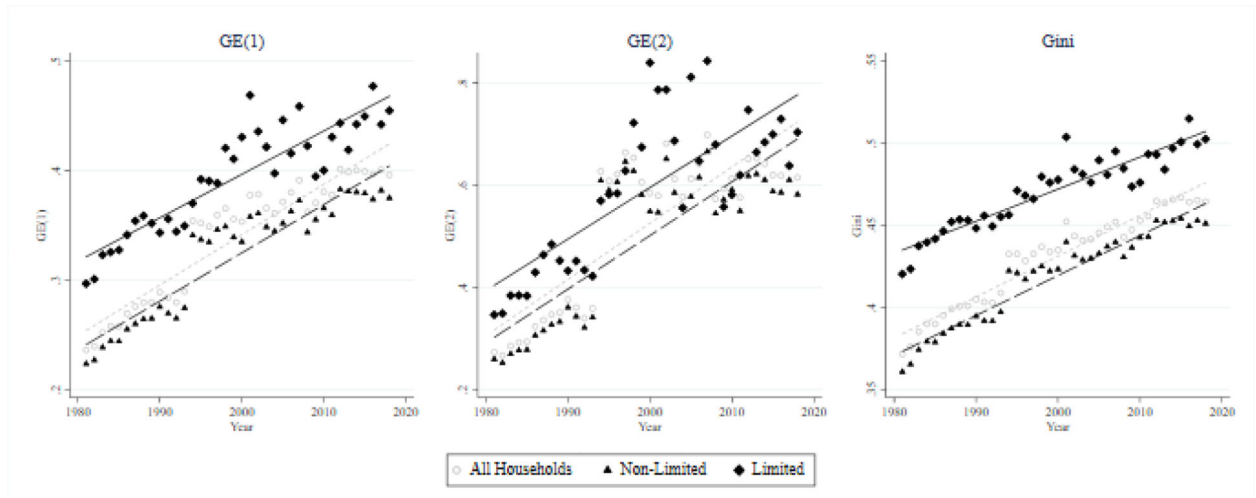
Relatedly, our analysis relies on identifying subpopulations by the current experience of work limitations, while in reality many individuals transition in and out of work limitations (Meyer and Mok 2019). Additionally, research shows that income and earnings trajectories can be altered outside of the immediate time frame when an individual reports a disability, a couple of years before and for years after onset (Meyer and Mok 2019). Therefore, to more aptly address inequality for households with disabilities, it would be informative to capture the household's experience with work or functional limitations over many years. Similar research is needed in other countries (e.g., OECD 2010). In this study we have elected to focus specifically on households where at least one member is of potential working age given our reliance on partitioning the sample by experiences with work limitations. However, an alternative strategy would focus on households where at least one person is above a traditional working age. This may be particularly important as individuals may experience more years with disability according to the Global Burden of Disease study 2015 (Kassebaum et al. 2016) as mortality falls worldwide. Finally, future work needs to consider the causal effects of social and health policies on the inequality associated with disability.

Stata Program Citations: (Jenkins 2008; Wiggins 2010)

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## Appendix:

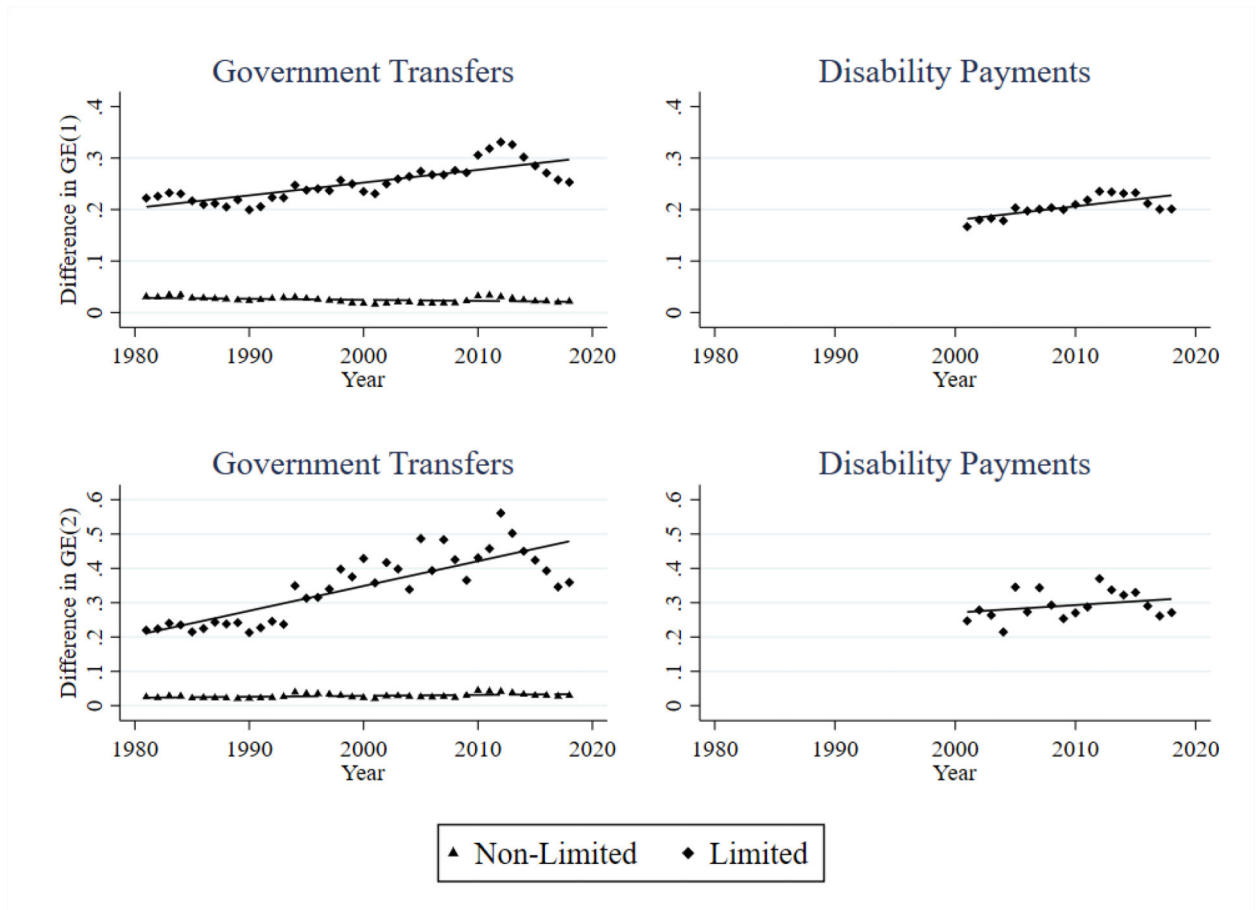


**Fig. A1.**

Within-group inequality measured by GE(1), GE(2), and the Gini Index

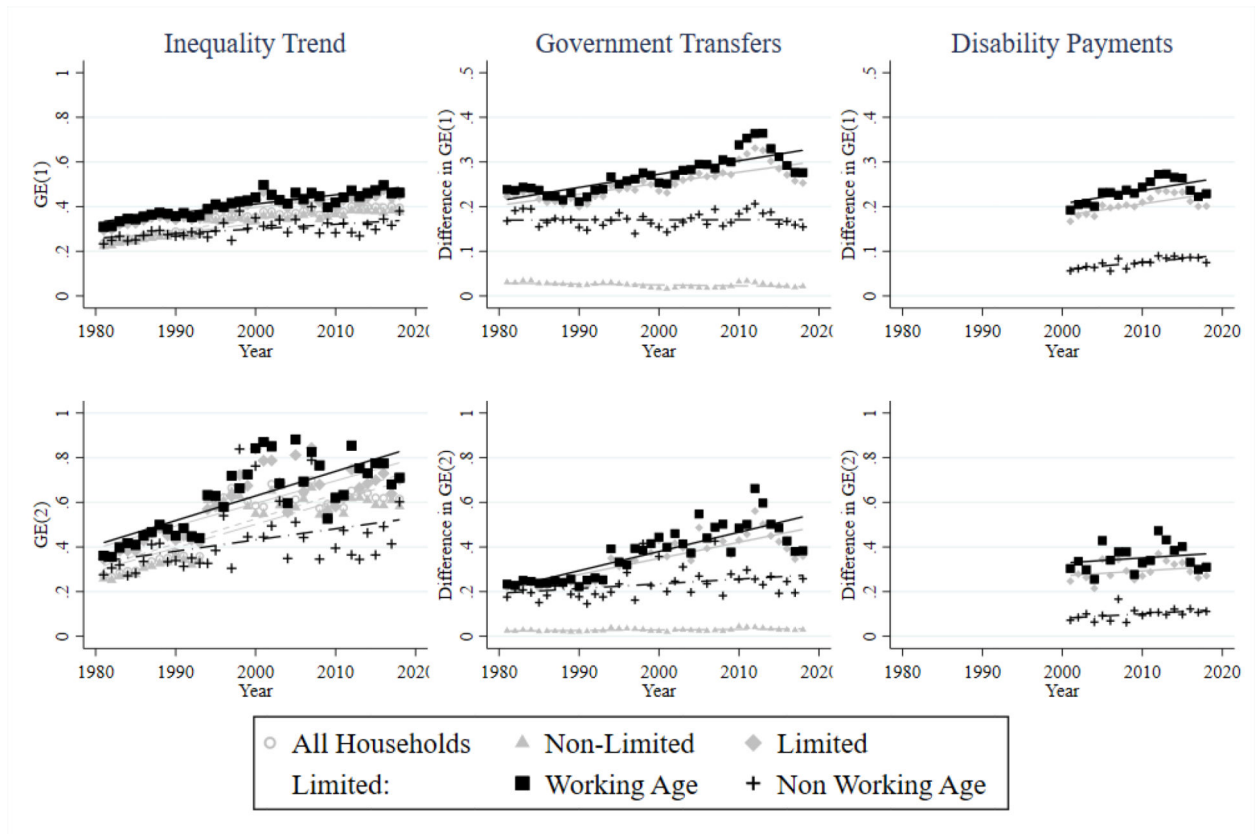
*Source:* Authors' calculations using March CPS



**Fig. A2.**

Progressivity with GE(1) and GE(2)

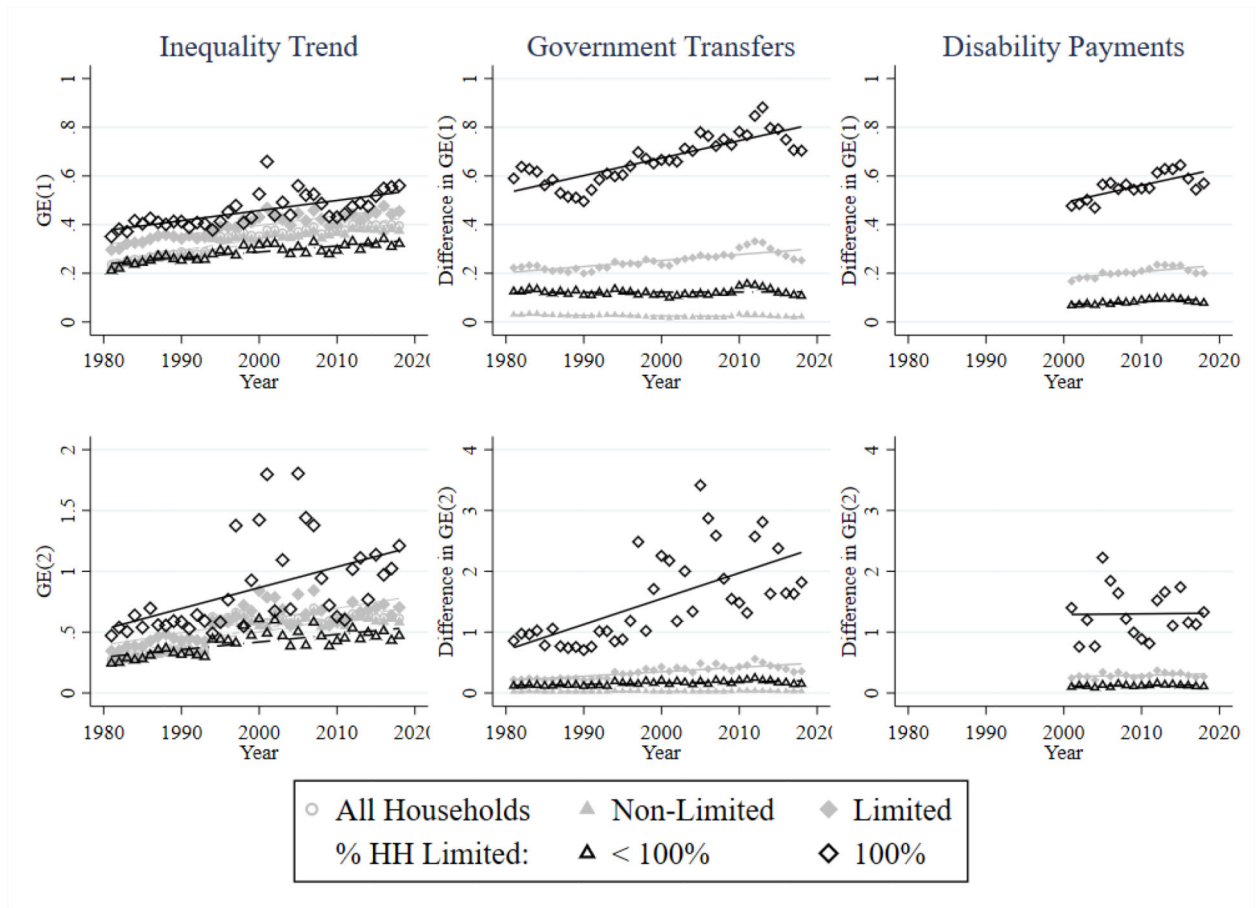
*Source:* Authors' calculations using March CPS

**Fig. A3.**

GE(1), GE(2) measures disaggregating work-limited households by age of work-limited members

*Notes:* Work-limited households are disaggregated by the age of the work-limited member. “Working age” limited households have at least one work-limited member of working age (age 21–61 inclusive), whereas all work-limited members in a “non-working age” limited household are under 21 or age 62 or older. Panels in the first row represent calculations using GE(1), and panels in the second row use GE(2). Left most panels shows trends in inequality while the middle (right) panels show trends in progressivity of government transfers (disability payments). Across all panels, lighter trend lines contextualize the disaggregated inequality shown with observed inequality for the total population, the non-limited, and (aggregated) work-limited populations.

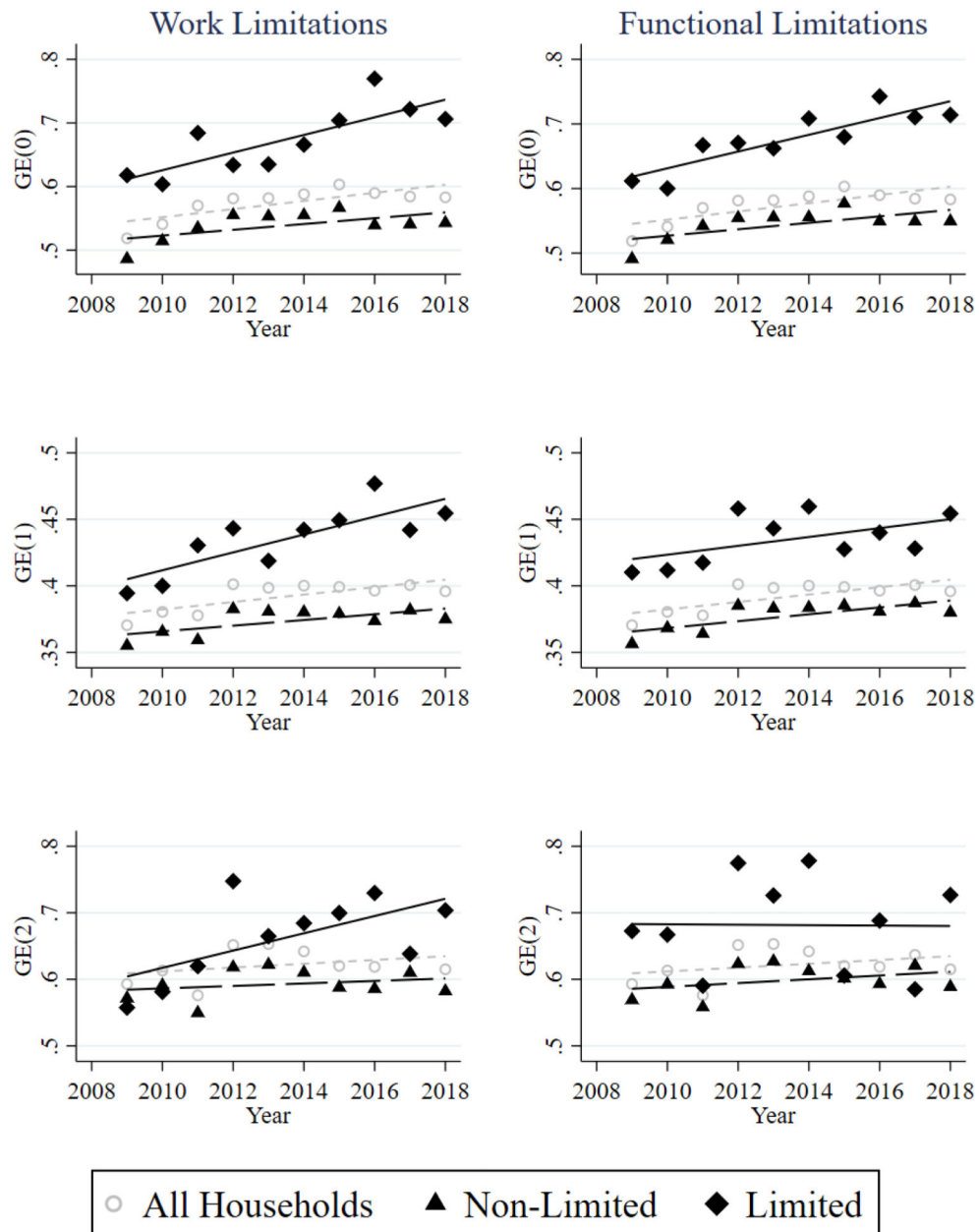
*Source:* Authors’ calculations using March CPS.

**Fig. A4.**

GE(1), GE(2) measures disaggregating work-limited households by share of work-limited members

*Notes:* Work-limited households are disaggregated on the intensive margin: the share of working-age household members who are work-limited. The category “< 100%” consists of all households where there is at least one working-age member who is not work-limited, whereas all working-age members of households identified in the “100%” group experience limitations. Panels in the first row represent calculations using GE(1), and panels in the second row use GE(2). The left most panel shows the trend in inequality, while the middle (right) panels show trends in progressivity of government transfers (disability payments). In all panels, lighter trend lines contextualize the disaggregated inequality shown with observed inequality for the total population, the non-limited, and (aggregated) work-limited populations.

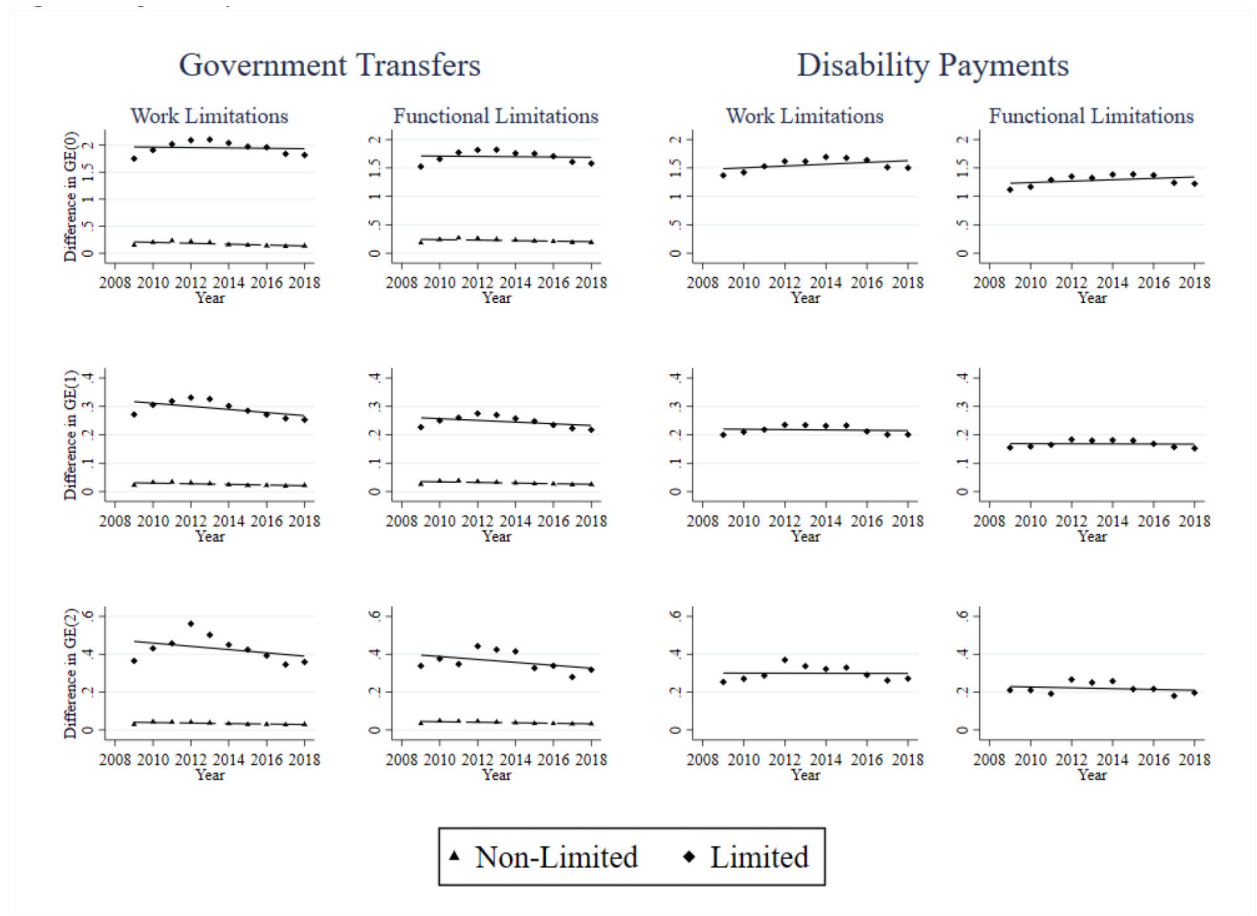
*Source:* Authors’ calculations using March CPS.

**Fig. A5.**

Comparing work and functional limitations 2008–2018

*Notes:* Left column shows work limitation population partition while right column shows functional-limitation partition of the total population. First row shows the main inequality metric, GE(0), while rows two and three show alternative measures GE(1) and GE(2) respectively.

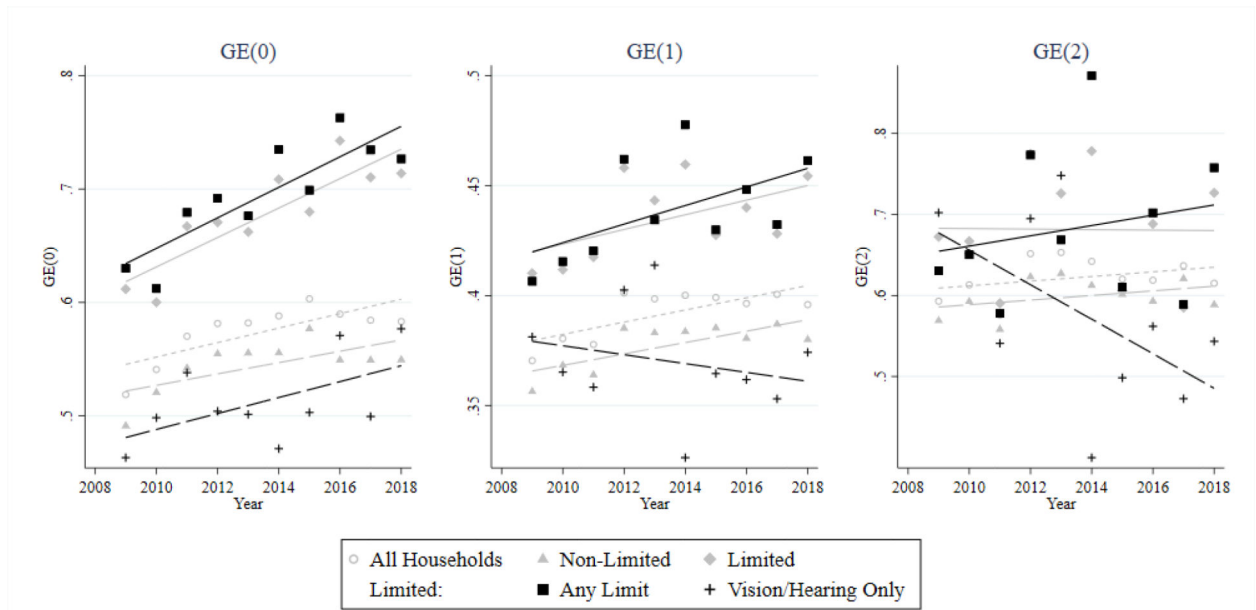
*Source:* Authors' calculations using March CPS.

**Fig. A6.**

Progressivity of Government Transfers for work and functional limitations

*Notes:* Left column shows work limitation population partition while right column shows functional-limitation partition of the total population. First row shows progressivity of government transfers for the main inequality metric, GE(0), while rows two and three show alternative measures GE(1) and GE(2) respectively.

*Source:* Authors' calculations using March CPS.

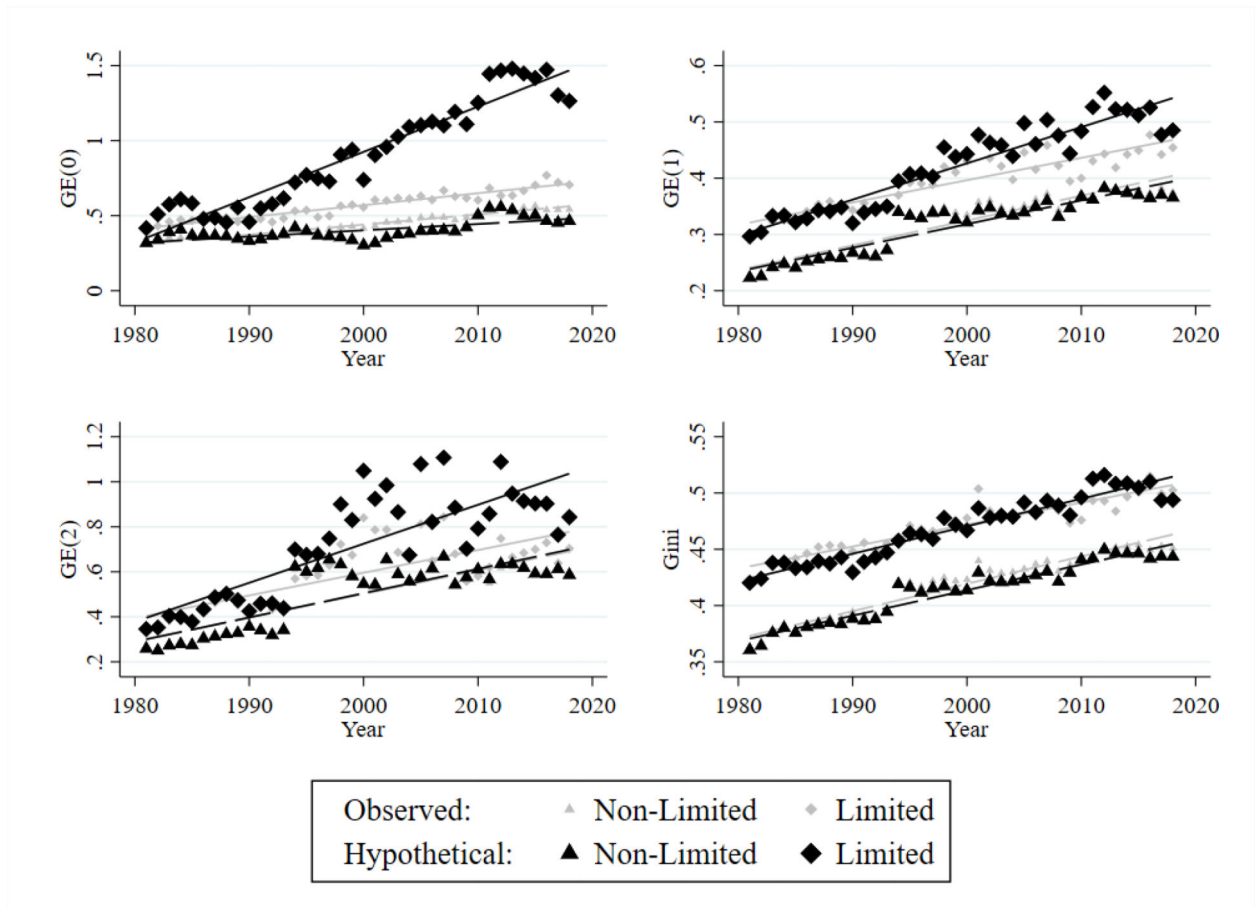
**Fig. A7.**

Considering type of limitation in the household

*Notes:* Disaggregating households identified with functional limitations based on the type of functional limitation reported. Households with “any limit” is the default category for a household with any member experiencing any type of functional limitation (vision, hearing, cognitive, ambulatory, self-care, or independent-living difficulties). Households identified by “Vision/Hearing only” limitations are households where all reported limitations for any member are only reported difficulties seeing or hearing. For reference, trends in inequality for the total, non-limited, and (aggregate) limited populations are included in gray.

*Source:* Authors’ calculations using March CPS.



**Fig. A8.**

What inequality indices would look like had progressivity remained at 1981 levels:

*Source:* Authors' calculations using March CPS.

**Table A1**

Descriptive Statistics for Work limitation partition of households (1981–2018)

	# HH	% HH work limitations	Work Limited				Non-Work Limited	
			% Working age	% All working- age limited	% Receive government transfers	% Receive disability payments	% Receive government transfers	% Receive disability payments
1981	53,891	0.142 (0.002)	0.812 (0.005)	0.326 (0.006)	0.687 (0.006)		0.270 (0.002)	
1982	48,338	0.143 (0.002)	0.807 (0.005)	0.316 (0.006)	0.692 (0.006)		0.266 (0.002)	
1983	48,167	0.139 (0.002)	0.812 (0.005)	0.306 (0.006)	0.700 (0.006)		0.291 (0.002)	
1984	48,091	0.140 (0.002)	0.800 (0.005)	0.324 (0.006)	0.678 (0.006)		0.273 (0.002)	

			Work Limited				Non-Work Limited	
			% HH work limitations	% Working age	% All working- age limited	% Receive government transfers	% Receive disability payments	% Receive government transfers
	# HH							% Receive disability payments
1985	48,449	0.143	0.803	0.332	0.681		0.239	
		(0.002)	(0.005)	(0.006)	(0.006)		(0.002)	
1986	47,587	0.141	0.811	0.320	0.667		0.236	
		(0.002)	(0.005)	(0.006)	(0.006)		(0.002)	
1987	46,987	0.140	0.816	0.328	0.668		0.231	
		(0.002)	(0.005)	(0.007)	(0.007)		(0.002)	
1988	47,460	0.133	0.814	0.338	0.682		0.217	
		(0.002)	(0.005)	(0.007)	(0.007)		(0.002)	
1989	44,330	0.130	0.831	0.348	0.665		0.210	
		(0.002)	(0.006)	(0.007)	(0.007)		(0.002)	
1990	48,202	0.132	0.835	0.343	0.672		0.208	
		(0.002)	(0.005)	(0.007)	(0.007)		(0.002)	
1991	48,233	0.134	0.830	0.340	0.693		0.230	
		(0.002)	(0.005)	(0.007)	(0.007)		(0.002)	
1992	47,598	0.136	0.838	0.345	0.699		0.246	
		(0.002)	(0.005)	(0.007)	(0.007)		(0.002)	
1993	47,331	0.139	0.840	0.345	0.713		0.249	
		(0.002)	(0.005)	(0.007)	(0.006)		(0.002)	
1994	45,749	0.146	0.841	0.359	0.712		0.239	
		(0.002)	(0.005)	(0.007)	(0.006)		(0.002)	
1995	45,792	0.146	0.845	0.365	0.700		0.223	
		(0.002)	(0.005)	(0.007)	(0.007)		(0.002)	
1996	40,035	0.145	0.842	0.365	0.700		0.212	
		(0.002)	(0.005)	(0.007)	(0.007)		(0.002)	
1997	40,531	0.146	0.840	0.365	0.698		0.199	
		(0.002)	(0.005)	(0.007)	(0.007)		(0.002)	
1998	40,866	0.141	0.849	0.391	0.696		0.184	
		(0.002)	(0.005)	(0.007)	(0.007)		(0.002)	
1999	41,201	0.136	0.853	0.400	0.702		0.172	
		(0.002)	(0.005)	(0.007)	(0.007)		(0.002)	
2000	41,484	0.139	0.853	0.372	0.676		0.167	
		(0.002)	(0.005)	(0.007)	(0.007)		(0.002)	
2001	40,333	0.136	0.854	0.404	0.687	0.527	0.157	0.023
		(0.002)	(0.005)	(0.007)	(0.007)	(0.008)	(0.002)	(0.001)
2002	66,186	0.139	0.862	0.407	0.695	0.532	0.177	0.022
		(0.002)	(0.004)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)
2003	66,171	0.135	0.855	0.404	0.697	0.541	0.180	0.021
		(0.002)	(0.004)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)
2004	65,092	0.141	0.866	0.411	0.699	0.535	0.179	0.020

	# HH	% HH work limitations	Work Limited				Non-Work Limited	
			% Working age	% All working- age limited	% Receive government transfers	% Receive disability payments	% Receive government transfers	% Receive disability payments
		(0.002)	(0.004)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)
2005	64,298	0.143	0.854	0.415	0.704	0.562	0.160	0.021
		(0.002)	(0.004)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)
2006	63,766	0.144	0.846	0.409	0.693	0.555	0.154	0.024
		(0.002)	(0.004)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)
2007	63,277	0.137	0.852	0.409	0.694	0.562	0.150	0.026
		(0.002)	(0.005)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)
2008	63,517	0.136	0.853	0.416	0.706	0.569	0.150	0.025
		(0.002)	(0.005)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)
2009	63,600	0.146	0.843	0.398	0.711	0.563	0.177	0.027
		(0.002)	(0.004)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)
2010	63,439	0.147	0.841	0.395	0.738	0.570	0.220	0.027
		(0.002)	(0.004)	(0.006)	(0.005)	(0.006)	(0.002)	(0.001)
2011	62,114	0.149	0.838	0.416	0.739	0.576	0.217	0.028
		(0.002)	(0.005)	(0.006)	(0.005)	(0.006)	(0.002)	(0.001)
2012	61,057	0.150	0.847	0.418	0.745	0.600	0.204	0.031
		(0.002)	(0.004)	(0.006)	(0.005)	(0.006)	(0.002)	(0.001)
2013	61,127	0.150	0.844	0.417	0.734	0.593	0.187	0.029
		(0.002)	(0.004)	(0.006)	(0.005)	(0.006)	(0.002)	(0.001)
2014	60,035	0.159	0.851	0.413	0.713	0.606	0.169	0.030
		(0.002)	(0.005)	(0.007)	(0.006)	(0.007)	(0.002)	(0.001)
2015	59,619	0.167	0.866	0.417	0.681	0.609	0.157	0.030
		(0.002)	(0.004)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)
2016	55,589	0.165	0.872	0.416	0.668	0.586	0.155	0.032
		(0.002)	(0.004)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)
2017	55,450	0.164	0.873	0.414	0.667	0.594	0.148	0.030
		(0.002)	(0.004)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)
2018	53,099	0.158	0.855	0.413	0.655	0.580	0.156	0.034
		(0.002)	(0.004)	(0.006)	(0.006)	(0.006)	(0.002)	(0.001)

Notes: Standard errors in parenthesis.

Source: Authors' calculations using March CPS.

**Table A2**  
Descriptive Statistics for Functional Limitation sample partition

	# HH	% HH functional limitations	Functional Limitations					No Functional Limitations	
			% Working age	% All working-age limited	% Vision or Hearing Only	% Receive government transfers	% Receive disability payments	% Receive government transfers	% Receive disability payments
2009	63,600	0.155 (0.002)	0.775 (0.005)	0.375 (0.006)	0.160 (0.004)	0.643 (0.006)	0.439 (0.006)	0.184 (0.002)	0.045 (0.001)
2010	63,439	0.154 (0.002)	0.772 (0.005)	0.367 (0.006)	0.161 (0.004)	0.671 (0.006)	0.431 (0.006)	0.227 (0.002)	0.047 (0.001)
2011	62,114	0.155 (0.002)	0.771 (0.005)	0.385 (0.006)	0.150 (0.004)	0.670 (0.006)	0.441 (0.006)	0.226 (0.002)	0.049 (0.001)
2012	61,057	0.156 (0.002)	0.771 (0.005)	0.378 (0.006)	0.152 (0.004)	0.676 (0.006)	0.464 (0.006)	0.214 (0.002)	0.052 (0.001)
2013	61,127	0.157 (0.002)	0.758 (0.005)	0.383 (0.006)	0.150 (0.004)	0.662 (0.006)	0.451 (0.006)	0.196 (0.002)	0.051 (0.001)
2014	60,035	0.154 (0.002)	0.759 (0.006)	0.377 (0.007)	0.139 (0.005)	0.653 (0.006)	0.463 (0.007)	0.183 (0.002)	0.059 (0.001)
2015	59,619	0.157 (0.002)	0.763 (0.005)	0.389 (0.006)	0.149 (0.004)	0.642 (0.006)	0.469 (0.006)	0.171 (0.002)	0.063 (0.001)
2016	55,589	0.156 (0.002)	0.755 (0.005)	0.385 (0.006)	0.149 (0.004)	0.628 (0.006)	0.445 (0.006)	0.168 (0.002)	0.064 (0.001)
2017	55,450	0.156 (0.002)	0.755 (0.005)	0.383 (0.006)	0.153 (0.005)	0.627 (0.006)	0.446 (0.006)	0.160 (0.002)	0.063 (0.001)
2018	53,099	0.155 (0.002)	0.749 (0.006)	0.381 (0.006)	0.157 (0.005)	0.616 (0.006)	0.433 (0.006)	0.165 (0.002)	0.063 (0.001)

Notes: Standard errors in parenthesis

Source: Authors' calculations using March CPS.

**Table A3**  
Trends in inequality by subpopulation: Functional Limitations

	GE(0)	GE(1)	GE(2)
All Households	0.00639 <sup>*</sup>	0.00278 <sup>*</sup>	0.00287
<i>Work Limit Partition:</i>			
Between Group Inequality	0.00006	0.00007	0.00007
Non-Limited	0.00457 <sup>+</sup>	0.00215 <sup>*</sup>	0.00186
Limited	0.01387 <sup>**</sup>	0.00672 <sup>**</sup>	0.01297 <sup>+</sup>
-- Not Working Age	0.01198 <sup>+</sup>	0.00551	0.00607
-- Working Age	0.01387 <sup>**</sup>	0.00713 <sup>*</sup>	0.01525
-- < 100% working age limited	0.00767 <sup>*</sup>	0.00375 <sup>+</sup>	0.00575

	GE(0)	GE(1)	GE(2)
-- All working age limited	0.02137 **	0.01610 ***	0.05475 *
<i>Functional Limit Partition:</i>			
Between Group Inequality	0.00014	0.00012	0.00010
Non-Limited	0.00500 *	0.00259 *	0.00285
Limited	0.01298 **	0.00333	-0.00032
-- Not Working Age	0.00831 **	0.00290	0.00370
-- Working Age	0.01525 ***	0.00373	-0.00291
-- < 100% working age limited	0.00506	0.00033	-0.00501
-- All working age limited	0.02396 **	0.01215 *	0.02688
-- Other limit	0.01346 **	0.00423 +	0.00635
-- Hearing/Vision limit only	0.00704 +	-0.00202	-0.02132 +

*Note:* Reported statistics are the coefficient from a linear regression of year on inequality measures. Households that are categorized as limited are further disaggregated in two distinct ways. First, they are disaggregated by the age of the work-limited member. “Working age” limited households have at least one work-limited member of working age (age 21–61 inclusive), whereas all work-limited members in a “non-working age” limited household are under 21 or age 62 or older. The second disaggregation is with respect to the share of working-age household members who are work-limited. The category “< 100% working age limited” consists of all households where there is at least one working-age member who is not work-limited, whereas all working-age members of households identified in the “All working age limited” group experience limitations. For functional limitations in particular, households are also partitioned by the type of functional limitation (i.e. hearing or vision only versus any other). Trends from the work-limitation partition for comparison rely on the same time period (i.e. 2009–2018).

+ p < 0.1

\* p < 0.

\*\* p < 0.01

\*\*\* p < 0.001.

*Source:* Authors’ calculations using March CPS

**Table A4**

Trends in progressivity by subpopulation: Functional Limitations

	Government Transfers			Disability Payments		
	GE(0)	GE(1)	GE(2)	GE(0)	GE(1)	GE(2)
All Households	-0.00418	-0.00131 +	-0.00181 +	--	--	--
<i>Work Limit Partition:</i>						
Non-Limited	-0.00826 *	-0.00111 *	-0.00134 *	--	--	--
Limited	-0.00361	-0.00548 +	-0.00870	0.01588	-0.00060	-0.00016
-- Not Working Age	-0.00213	-0.00326 +	-0.00622 +	0.00649	0.00085	0.00084
-- Working Age	-0.00842	-0.00693 +	-0.01014	0.01307	-0.00174	-0.00126
-- < 100% working age limited	-0.01416	-0.00415 *	-0.00621 +	-0.00084	-0.00083	-0.00121
-- All working age limited	0.00934	-0.00658	0.02038	0.03397 +	0.00299	0.03933
<i>Functional Limit Partition:</i>						
Non-Limited	-0.00450	-0.00105 +	-0.00138 *	--	--	--
Limited	-0.00276	-0.00300	-0.00764	0.01236	-0.00019	-0.00214
-- Not Working Age	-0.00729	-0.00263	-0.00462	0.00006	-0.00051	-0.00076

	Government Transfers			Disability Payments		
	GE(0)	GE(1)	GE(2)	GE(0)	GE(1)	GE(2)
-- Working Age	0.00200	-0.00280	-0.00909	0.02028	0.00063	-0.00277
-- < 100% working age limited	-0.00758	-0.00271	-0.00610	0.00125	-0.00059	-0.00186
-- All working age limited	-0.00030	-0.00297	-0.00539	0.02461	0.00219	0.00395
-- Other limit	-0.00317	-0.00319	-0.00536	0.01454	0.00005	-0.00042
-- Hearing/Vision limit only	-0.00547	-0.00161	-0.00610 <sup>*</sup>	-0.00420	-0.00066	-0.00187

*Note:* Reported statistics are the coefficient from a linear regression of year on progressivity measures. Households that are categorized as limited are further disaggregated in two distinct ways. First, they are disaggregated by the age of the work-limited member. “Working age” limited households have at least one work-limited member of working age (age 21–61 inclusive), whereas all work-limited members in a “non-working age” limited household are under 21 or age 62 or older. The second disaggregation is with respect to the share of working-age household members who are work-limited. The category “< 100% working age limited” consists of all households where there is at least one working-age member who is not work-limited, whereas all working-age members of households identified in the “All working age limited” group experience limitations. For functional limitations in particular, households are also partitioned by the type of functional limitation (i.e. hearing or vision only versus any other). Trends from the work-limitation partition for comparison rely on the same time period (i.e. 2009–2018).

<sup>+</sup> p < 0.1

<sup>\*</sup> p < 0.5

<sup>\*\*</sup> p < 0.01

<sup>\*\*\*</sup> p < 0.001.

*Source:* Authors’ calculations using March CPS

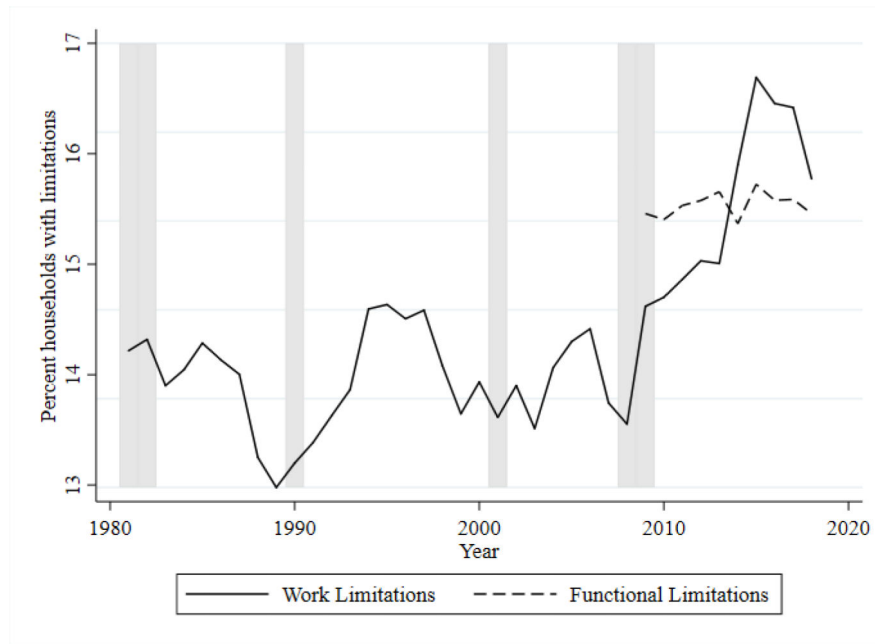
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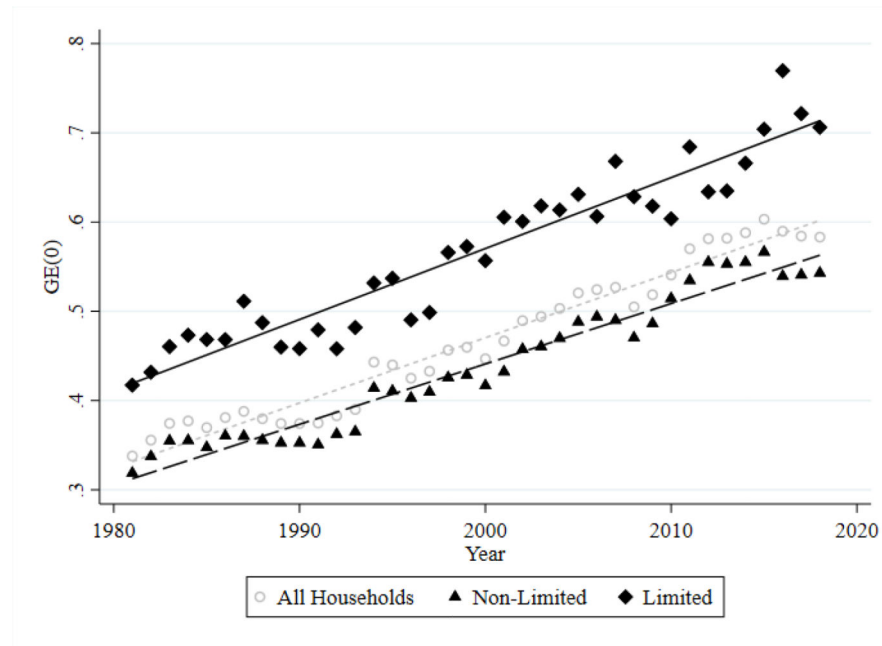
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**Fig. 1.**

Prevalence of work and functional limitations over time

*Note:* Recessions shaded in gray. The spike in households reporting work limitations in 2014 may be in part attributable to a question shift in CPS (see footnote 2).

*Source:* Authors' calculations using March CPS



**Fig. 2.**

Inequality by work limitation status over time

*Note:* Values other than zero for alpha follow similar trends.

*Source:* Authors' calculations using March CPS

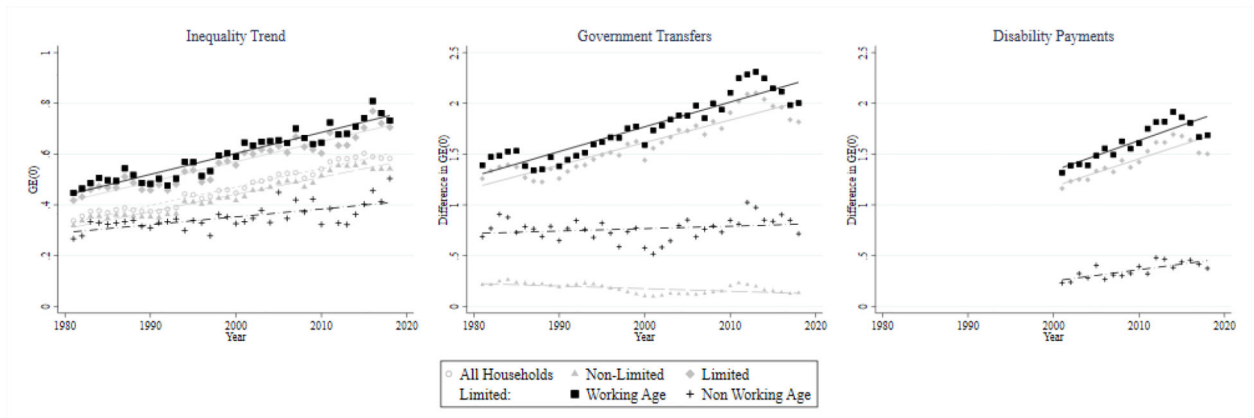


**Fig. 3.**

Progressivity of Government transfers and disability payment over time

*Notes:* Only the work-limited population is shown for disability income because there is very low incidence of disability income receipt among households not reporting work limitations. Progressivity is the absolute difference in GE(0) measure of inequality pre-transfer and post-transfer. Visual trends are significant at the 1% level. Other inequality indices follow similar patterns, and are available upon request.

*Source:* Authors' calculations using March CPS

**Fig. 4.**

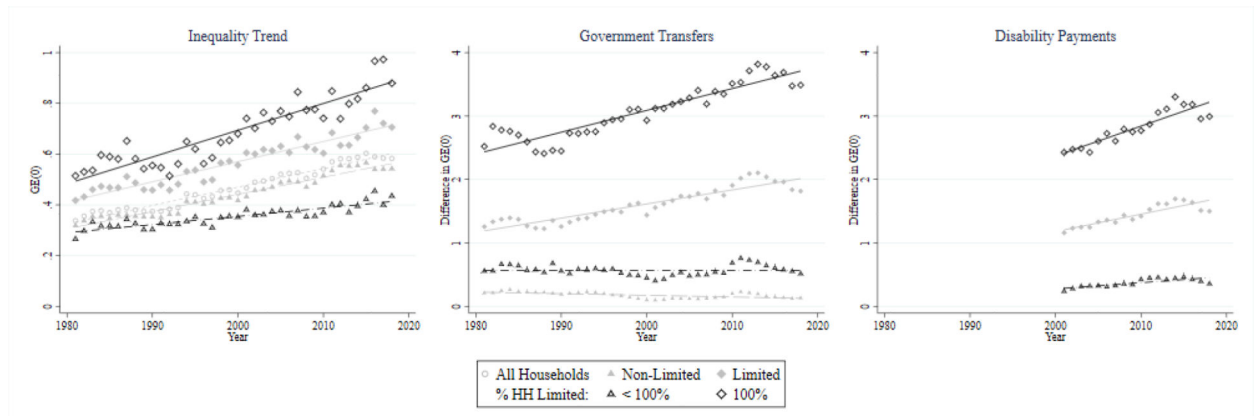
Disaggregating work-limited households by age of work-limited members

*Notes:* Work-limited households are disaggregated by the age of the work-limited member.

“Working age” limited households have at least one work-limited member of working age (age 21–61 inclusive), whereas all work-limited members in a “non-working age” limited household are under 21 or age 62 or older. The left most panel shows trends in inequality while the middle (right) panels show trends in progressivity of government transfers (disability payments). Across all panels, lighter trend lines contextualize the disaggregated inequality shown with observed inequality for the total population, the non-limited, and (aggregated) work-limited populations.

*Source:* Authors’ calculations using March CPS.



**Fig. 5.**

Disaggregating work-limited households by share of work-limited members

*Notes:* Work-limited households are disaggregated on the intensive margin: the share of working-age household members who are work-limited. The category “< 100%” consists of all households where there is at least one working-age member who is not work-limited, whereas all working-age members of households identified in the “100%” group experience limitations. The left most panel shows the trend in inequality, while the middle (right) panels show trends in progressivity of government transfers (disability payments). In all panels, lighter trend lines contextualize the disaggregated inequality shown with observed inequality for the total population, the non-limited, and (aggregated) work-limited populations.

*Source:* Authors’ calculations using March CPS.

**Table 1**

Trends in inequality by subpopulation

	GE(0)	GE(1)	GE(2)
All Households	0.00730 ***	0.00461 ***	0.0110 ***
<i>Work Limit Partition:</i>			
Between Group Inequality	0.000290 ***	0.000249 ***	0.000217 ***
Non-Limited	0.00676 ***	0.00441 ***	0.0105 ***
Limited	0.00795 ***	0.00397 ***	0.0101 ***
-- Not Working Age	0.00307 ***	0.00208 ***	0.00501 *
-- Working Age	0.00828 ***	0.00409 ***	0.0110 ***
-- < 100% working age limited	0.00322 ***	0.00246 ***	0.00620 ***
-- All working age limited	0.0106 ***	0.00417 ***	0.0171 ***

*Note:* Reported statistics are the coefficient from a linear regression of year on inequality measures. Households that are categorized as limited are further disaggregated in two distinct ways. First, they are disaggregated by the age of the work-limited member. “Working age” limited households have at least one work-limited member of working age (age 21–61 inclusive), whereas all work-limited members in a “non-working age” limited household are under 21 or age 62 or older. The second disaggregation is with respect to the share of working-age household members who are work-limited. The category “< 100% working age limited” consists of all households where there is at least one working-age member who is not work-limited, whereas all working-age members of households identified in the “All working age limited” group experience limitations.

<sup>+</sup>  
p < 0.1

<sup>\*</sup>  
p < 0.5

<sup>\*\*</sup>  
p < 0.01

<sup>\*\*\*</sup>  
p < 0.001.

*Source:* Authors’ calculations using March CPS

Table 2

Trends in progressivity of government transfers and disability payments by subpopulation

	Government Transfers			Disability Payments		
	GE(0)	GE(1)	GE(2)	GE(0)	GE(1)	GE(2)
All Households	0.00207**	0.000130	0.000879***	--	--	--
<i>Work Limit Partition:</i>						
Between Group Inequality	--	--	--	--	--	--
Non-Limited	-0.00256***	-0.000203**	0.000267**	--	--	--
Limited	0.0222***	0.00248***	0.00723***	0.0274***	0.00269***	0.00221
-- Not Working Age	0.00239	2.97e-05	0.00212*	0.0111***	0.00165***	0.00200 <sup>+</sup>
-- Working Age	0.0244***	0.00298***	0.00862***	0.0297***	0.00296**	0.00233
-- < 100% working age limited	6.57e-05	8.13e-05	0.00210***	0.00995***	0.00120**	0.000966
-- All working age limited	0.0344***	0.00717***	0.0423***	0.0472***	0.00702***	0.00118

*Note:* Reported statistics are the coefficient from a linear regression of year on progressivity measures. Households that are categorized as limited are further disaggregated in two distinct ways. First, they are disaggregated by the age of the work-limited member. "Working age" limited households have at least one work-limited member of working age (age 21–61 inclusive), whereas all work-limited members in a "non-working age" limited household are under 21 or age 62 or older. The second disaggregation is with respect to the share of working-age household members who are work-limited. The category < 100% working age limited" consists of all households where there is at least one working-age member who is not work-limited, whereas all working-age members of households identified in the "All working age limited" group experience limitations.

<sup>+</sup> p < 0.1

\* p < 0.5

\*\* p < 0.01

\*\*\* p < 0.001.

*Source:* Authors' calculations using March CPS