

Lehner, Lukas; Parolin, Zachary; Wilmers, Nathan

Working Paper

Declining Earnings Inequality, Rising Income Inequality: What Explains Discordant Inequality Trends in the United States?

IZA Discussion Papers, No. 16874

Provided in Cooperation with:

IZA – Institute of Labor Economics

Suggested Citation: Lehner, Lukas; Parolin, Zachary; Wilmers, Nathan (2024) : Declining Earnings Inequality, Rising Income Inequality: What Explains Discordant Inequality Trends in the United States?, IZA Discussion Papers, No. 16874, Institute of Labor Economics (IZA), Bonn

This Version is available at:

<https://hdl.handle.net/10419/295897>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

DISCUSSION PAPER SERIES

IZA DP No. 16874

**Declining Earnings Inequality, Rising
Income Inequality: What Explains
Discordant Inequality Trends in the
United States?**

Lukas Lehner
Zachary Parolin
Nathan Wilmers

MARCH 2024

DISCUSSION PAPER SERIES

IZA DP No. 16874

Declining Earnings Inequality, Rising Income Inequality: What Explains Discordant Inequality Trends in the United States?

Lukas Lehner

Bocconi University

Zachary Parolin

Bocconi University and IZA

Nathan Wilmers

MIT

MARCH 2024

Any opinions expressed in this paper are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but IZA takes no institutional policy positions. The IZA research network is committed to the IZA Guiding Principles of Research Integrity.

The IZA Institute of Labor Economics is an independent economic research institute that conducts research in labor economics and offers evidence-based policy advice on labor market issues. Supported by the Deutsche Post Foundation, IZA runs the world's largest network of economists, whose research aims to provide answers to the global labor market challenges of our time. Our key objective is to build bridges between academic research, policymakers and society.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

ISSN: 2365-9793

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Declining Earnings Inequality, Rising Income Inequality: What Explains Discordant Inequality Trends in the United States?*

From 2010 to 2019, personal earnings inequality declined in the United States (U.S.) for the first time in decades, yet household income inequality continued to increase. Discordance between trends in personal earnings inequality and household income inequality was greater than in any other decade in recent U.S. history. We introduce a framework to decompose differences in inequality trends. We find that 46% of the 2010-2019 discordance is due to the changing household composition of workers. Specifically, a larger share of young workers are living with their parents, thus combining low personal earnings with high household incomes. The remaining 54% of discordance stems from inequality-increasing shifts in non-labor income (private income, taxes, and transfers). Despite the rare decline in U.S. earnings inequality, household income inequality increased due to changes in workers' household composition, increases in private income among higher-earning households, and the declining redistributive effect of government income transfers.

JEL Classification: D31, E01, H24, I38, J31

Keywords: earnings inequality, income inequality, household composition, secondary earners, government transfers

Corresponding author:

Zachary Parolin
Bocconi University
Via Roberto Sarfatti, 25
20100 Milano MI
Italy

E-mail: zachary.parolin@unibocconi.it

* Lehner and Parolin acknowledge funding from the European Union (ERC Starting Grant, ExpPov, #101039655). Views and opinions expressed are however those of the authors only and do not necessarily reflect those of the European Union or the European Research Council; neither the European Union nor the granting authority can be held responsible for them.

1 Introduction

From 1970 to 2010, personal earnings inequality steadily increased in the United States (U.S.). During this period, earnings at the 90th percentile of the earnings distribution grew 45 percent more than the 10th percentile.¹ Simultaneously, household income inequality (inclusive of taxes, transfers, and private income²) increased considerably.

From 2010 to 2019, however, personal earnings inequality declined, marking the first consistent decrease since at least the 1970s. Aeppli and Wilmers (2022) document declining earnings inequality during this period across several household income surveys and administrative data sources. The decline was primarily due to rising relative wage growth of workers near the bottom of the earnings distribution, largely a product of tight labor markets and broadly shared growth across lower-pay occupations. Amidst the COVID-19 pandemic, the “unexpected compression in the U.S. wage distribution” continued, with rising wage growth among lower-pay workers offsetting approximately one-fourth of the increase in the P90/P10 ratio observed in the previous decades (Autor et al., 2023).

However, despite the stark turnaround in personal earnings inequality, household income inequality did not follow suit; instead, household income inequality continued its decades-long rise between 2010 and 2019 (and, alternatively, between 2010 and 2022). Though personal earnings and household income inequality largely evolved in parallel between 1980 and 2010, the two trends experienced their greatest discordance in recent U.S. history between 2010 and 2019.³

This study introduces a decomposition framework to explain discordant trends in inequality measures. We apply the framework to decompose diverging trends in *personal earnings* inequality and *household income* inequality in the U.S. into two main components: household composition effects and non-labor income effects. Household composition effects are most directly observed when comparing *personal* earnings inequality to *household* earnings inequality: if higher relative growth at the bottom of the personal earnings distribution is achieved, for instance, among secondary earners with high household earnings, then discordance between the two inequality trends can occur. Non-labor income effects are most directly observed when comparing household *earnings* inequality to household *income*

¹Authors’ calculations from the Current Population Survey, as described in this manuscript.

²Private income refers to other non-government income sources beyond earnings from employment, such as rent, dividends, and other private sources defined in Section 2.1.

³Specifically, the greatest discordance since at least 1967, the first year for which we have reliable income data from the Current Population Survey.

inequality: changes in the distribution of taxes, transfers, or private income can confer rising household income inequality even if household earnings inequality declines.⁴ Within these two primary decomposition components, we can also identify the relevance of specific sub-components, such as the precise compositional features that generate discordance due to household composition effects, and the specific tax and transfer programs or private incomes that generate discordance due to non-labor income effects.

Our study contributes in several ways to the literature on earnings and income inequality. First, our decomposition framework offers a flexible tool for dissecting differences in inequality trends. Though the trends and sources of personal earnings inequality (or, separately but relatedly, *wage* inequality) are well-documented in economics (Katz and Murphy, 1992; Lemieux, 2006; Autor et al., 2008; Autor, 2014; Song et al., 2019) and sociology (Mouw and Kalleberg, 2010; Western and Rosenfeld, 2011; Liu and Grusky, 2013), researchers often overlook that earnings and income inequality are distinct concepts that do not necessarily evolve in parallel. Moreover, trends in the two measures carry distinct meanings. Changes in earnings inequality represent labor market dynamics, with rising earnings inequality from the 1970s to 2010s arguably signaling that “the market economy has been malfunctioning” (Acemoglu, 2024) or that workers’ bargaining power has eroded (Kristal, 2013; Wilmers, 2018).

Personal earnings, however, are only one component of household income. Among workers around the 10th percentile of the earnings distribution, for example, personal earnings generally compose only half of the total household income (with the other half mostly coming from other household members’ earnings; see Figure H2).⁵ The earnings of other household members, plus tax liabilities, income transfers, and private income—all of which are components of household *income* inequality—play critical roles in shaping household consumption capabilities. A substantial literature provides causal evidence that government income transfers, for example, can increase household consumption capabilities and general well-being (Hoynes et al., 2016; Hoynes and Patel, 2018; Parolin and Filauro, 2023). Thus, while trends in personal earnings inequality offer insight into the relative distortions of the labor market, trends in household income inequality more directly speak to disparities in

⁴Pensions can be considered deferred labor income, yet are treated here as private income (private pensions) and transfers (Social Security).

⁵Additionally, measures of earnings inequality are often calculated among a subset of workers who are engaged in consistent (often more than part-time) work. This strict sample restriction, while necessary for estimating earnings inequality among *core* workers, nonetheless disregards the incomes of a large share of the U.S. population.

household welfare and consumption capabilities.⁶ This study’s decomposition framework allows researchers to reconcile discordant trends in the two measures, with implications for how researchers should interpret the welfare consequences of declining personal earnings inequality.

Second, we offer substantial detail on the demographic and policy mechanisms that have shaped discordance between personal earnings and household income inequality trends. Contributing to the population economics literature, we estimate that changing household composition contributed to 46 percent of the discordance between declining personal earnings inequality and rising household income inequality from 2010-2019. This is primarily due to a rising share of secondary earners (e.g., adults who are not the highest earners in their household) working at the bottom of the personal earnings distribution. We find that secondary earners (a) often have high household incomes despite low relative earnings (more than 40 percent of secondary earners at the bottom of the *personal earnings* distribution in 2019 had *household incomes* in the top half of the household income distribution); (b) brought in the majority’s share of total earnings in the bottom earnings quartile in 2019, following a steady increase from 2010; and (c) are increasingly young workers living with their parents. These young workers (between ages 16 and 30) are more likely than in prior decades to still live with their parents (see also Fry et al. (2020)) and, from 2010 to 2019, were concentrated in occupations that experienced the largest relative earnings growth. Focusing on lead earners only, personal earnings inequality continued to increase after 2010 (Figure H3), further confirming the importance of secondary earners in driving discordance in inequality trends. The household composition of workers, and the rise of young secondary earners at the bottom of the earnings distribution specifically, carry large consequences for how personal earnings inequality translates into household earnings inequality.

Contributing to U.S. public policy research, we document that declining Earned Income Tax Credit (EITC) and Supplemental Nutrition Assistance Program (SNAP) benefits after 2010 drive much of the remaining discordance between declining earnings versus rising income inequality. Moreover, we find that the declining inequality-reducing capacity of these benefits after the Great Recession is due to both declining eligibility for EITC and SNAP benefits, as well as declining benefit levels among recipients. These trends persist even

⁶Other scholars go further than we do in criticizing research focused solely on wage or earnings inequality. Milanović (2023) writes that “wage studies leave out the large chunks of what makes inequality” and “miss why we care about inequality in the first place.” Atkinson (1975) writes, “It is indeed striking how much the recent discussion has focused exclusively on wage differentials and not asked whether such differences are associated with [income] inequality.”

after adjusting for benefit misreporting in the Current Population Survey, and are largely related to demographic processes discussed previously: when workers’ earnings increase, and when workers with higher household incomes enter lower-pay jobs, the bottom of the earnings distribution is increasingly populated by workers whose household incomes (or, in some cases, *family* or *tax-unit* incomes) disqualify them from receiving certain types of government income support. Not accounting for the substitution of earnings and external income sources, such as EITC or SNAP benefits, explains in part why declining earnings inequality coincides with rising income inequality.

2 Data and Methods

Our primary data source for measuring inequality is the Current Population Survey Annual Social and Economic Supplement (CPS ASEC). The CPS ASEC features representative data of the U.S. population covering annual earnings and non-labor income sources. ASEC data on income from taxes and transfers, in particular, are superior to existing data in alternative sources, such as the Merged Outgoing Rotation Groups or the American Community Survey. Our primary analysis uses data from calendar years 1970 (near the beginning of the ASEC) to 2019, just before the COVID-19 pandemic. We exclude the pandemic years from our primary analysis given the extraordinary labor market and welfare state conditions during that period, as are well-documented in other work (Parolin, 2023). However, we extend our analysis through 2022, including the period of the “unexpected compression” (Autor et al., 2023); our core conclusions are consistent whether examining trends through 2019 or 2022 (see Appendix E).⁷

Sample We measure earnings inequality among workers who meet the following characteristics: employed individuals between the ages of 16 and 64, who work at least 20 hours per week on average, who work at least 40 weeks per year, and who report wages of at least \$4 per hour in 2018 USD. This is consistent with Aeppli and Wilmers (2022). We refer to this group as *core workers*. For sample consistency when comparing personal earnings and household income inequality, we also limit our sample to core workers when studying trends in household income inequality. We show in Figure H4 that trends in household income inequality among core workers mirror trends among the full population.

⁷The same is true if we end our time series in 2018, as the findings will show, which indicates that our conclusions are not sensitive to the larger non-response bias that occurred in the CPS ASEC during the COVID-19 pandemic.

2.1 Measuring Inequality: Personal Earnings and Household Income

We produce three primary inequality measures in the ASEC (see Appendix Table B1 for a summary of their differentiating features). We measure *personal earnings* inequality using data on annual earnings from employment, given that hourly wage data are not reported directly in the ASEC for most respondents.⁸ *Household earnings* is measured similarly, but among all members of a household rather than among individuals. Finally, *household income inequality* is a household measure of all direct income sources, including tax liabilities, transfers (including near-cash benefits, such as those in SNAP, and refundable tax credits, such as the EITC), and private income sources (income from rent, dividends, interest on investments, private pensions, worker’s compensation, veteran’s benefits, survivor’s benefits, private education assistance, child support payments, or private transfers). We adopt the household, rather than family unit or the Supplemental Poverty Measure’s (SPM) resource unit, as our unit of analysis for pooled income, though our results are comparable if we use these alternative units (given that household, family, and the SPM unit are identical for the vast majority of individuals).

We emphasize that the income concepts we employ follow longstanding practice in U.S. inequality research (Citro and Michael, 1995; UNECE, 2011; Atkinson, 2019). Our post-tax/transfer income concept is identical to the income definition used in OECD reports on income inequality, in the LIS Cross-National Data Center, and in the U.S. government’s Supplemental Poverty Measure (SPM).⁹ Our income concept more directly represents household consumption capabilities and requires substantially fewer assumptions relative to aggregate income concepts produced in the distributional national accounts (DINA) framework (Piketty et al., 2018). The DINA definition of income treats items such as national defence spending and education spending as equivalent to, say, a household’s SNAP benefits, and relies on large assumptions regarding how total government spending on services and public goods should be allocated across the income distribution. Moreover, income based on the DINA framework, or that of Auten and Splinter (2023), is not individually allocated to households within public micro-data, disallowing a study, such as ours, that attempts to dissect inequality trends into

⁸Hourly wages are reported directly for respondents who are in their fourth or eighth month in the CPS sample; thus, only 25 percent of the ASEC sample directly reports hourly wages. Using this subsample, we find declines in the P90/P10 hourly wage ratio from 2010 to 2019 (and to 2022) consistent with our annual earnings inequality trends. We nonetheless prioritize annual earnings given our comparison with annual household earnings and annual household income.

⁹The only difference with respect to the SPM concept is that we do not deduct expenses, as the SPM does when computing household resources.

demographic and policy changes. Thus, while the DINA framework is useful for producing national inequality aggregates that consider all potential national income, it is less useful for understanding the dynamics of inequality in households' real consumption capabilities.

We measure inequality using percentile ratios (the P90/P10 and P50/P10 ratios, in particular), a common practice in the inequality literature (recent examples include Aeppli and Wilmers (2022); Autor et al. (2023)), though our decomposition framework functions with any standard inequality measure. For a given income definition i and year t , we can produce a measure of inequality, in this case using the example of the P90/P10 ratio:

$$\gamma_t^i = \frac{\text{P90}^i}{\text{P10}_t} \quad (1)$$

We compare trends to baseline values in 1970, with a focus on percent changes in inequality from the baseline year. (The selection of the baseline year does not affect the findings; we present alternative results set to the baseline year 2010 in Figures B2 and B3). As such, our primary descriptive indicators of interest are:

$$\hat{\gamma}_t^i = \left(\frac{\gamma_t^i}{\gamma_{1970}^i} \right) - 1 \quad (2)$$

To start, we compare descriptive trends in $\hat{\gamma}_t^{pe}$, $\hat{\gamma}_t^{he}$, and $\hat{\gamma}_t^{hi}$ (superscripts representing personal earnings, household earnings, and household income inequality, respectively; see Table B1 for the differences across these three income definitions). We then decompose the differences in the trends to provide a first approximation of the extent to which the discordance between $\hat{\gamma}_t^{hi}$ and $\hat{\gamma}_t^{pe}$ is due to household composition effects (the shift from personal to household earnings inequality) or non-labor income effects (the shift from household earnings to income). In any given year, the discordance due to household composition effects is defined as:

$$\sigma_t^h = \hat{\gamma}_t^{he} - \hat{\gamma}_t^{pe} \quad (3)$$

And the discordance due to non-labor income effects is defined as:

$$\sigma_t^i = \hat{\gamma}_t^{hi} - \hat{\gamma}_t^{he} \quad (4)$$

In this case, $\sigma_t^h + \sigma_t^i$ is equal to the gap between the indexed inequality trend based on

household income versus personal earnings, or: $\sigma_t^h + \sigma_t^i = (\hat{\gamma}_t^{he} - \hat{\gamma}_t^{pe}) + (\hat{\gamma}_t^{hi} - \hat{\gamma}_t^{he}) = \hat{\gamma}_t^{hi} - \hat{\gamma}_t^{pe}$. We visualize σ_t^h and σ_t^i by year to offer a first accounting of the discordance. We then further decompose the two terms to explain what is driving the disconnect between the two specified income concepts.

2.2 Household Composition Effects: Decomposing Discordance Between Personal Earnings and Household Earnings Inequality

Given that σ_t^h (discordance between personal and household earnings inequality) exclusively focuses on earnings, the value of the term must be driven by changes in the household composition of workers. For example, imagine that in year t , all employed workers are the lead earners in their households and no co-residing adults are employed; but in year $t + 1$, as labor demand increases, the co-residing adults of the highest-earning workers enter the labor market in lower-pay jobs. In this scenario, personal earnings inequality may decline from t to $t + 1$; however, household earnings inequality could simultaneously increase given that the added workers reside in households toward the top of the earnings distribution in time t . (In this scenario, σ_t^h is increasing from t to $t + 1$). Changes in the characteristics of the households in which core workers reside can thus affect σ_t^h .

To decompose σ_t^h into a set of observable household characteristics, we apply reweighted centered influence functions in a Kitigawa-Oaxaca-Blinder decomposition (reweighted RIF-KOB) (Fortin et al., 2011; Firpo et al., 2018). Kitigawa-Oaxaca-Blinder analyses are commonly used to provide a non-casual decomposition of group means. In contrast, semi-parametric reweighting decompositions, most prominently applied in DiNardo et al. (1996), allow for analyses that extend beyond the mean of group differences. By reweighting one group’s sample to match the observed covariates of another group’s sample, one can analyze the full distribution of outcomes and produce, for example, a counterfactual 90th percentile value of an income distribution if the composition of group B (say, 2019) matched the composition of group A (say, 1970). Standard reweighting decompositions, however, do not offer a clean dissection of how each individual covariate contributes to the difference in the distributional outcome. To address this, we apply reweighted influence functions (RIF) (Firpo et al., 2018; Rios-Avila, 2020). The underlying logic of the RIF is similar to a quantile regression model to obtain the marginal effect of a given covariate on a distribution of interest (Firpo et al., 2009). For example, we might be interested in how a unit increase in single-parenthood influences the p th percentile (say, 10th or 90th percentile) of a given

distribution. This approach can easily be extended to studying the marginal effect of a unit increase in a covariate on a summary indicator of inequality, such as the P90/P10 ratio. This is an improvement beyond the basic reweighting decompositions, as we can move beyond studying the aggregate effect of compositional differences on variation in inequality, and instead understand which specific covariates influence that variation in inequality. The application of the procedure is detailed in Appendix A.

The RIF-KOB allows us to apply a reweighting decomposition of the P90/P10 and P50/P10 ratios, for personal and household earnings inequality, in which we can estimate how changes in specific covariates affect changes in inequality. Specifically, we can produce descriptive counterfactual inequality trends if a set of observed covariates of interest were held constant at 1970 levels for each subsequent year t . We can define this counterfactual level of income inequality as:

$$\gamma_{(t|x=1970)}^i = \frac{\text{P90}^i}{\text{P10}_{t|x=1970}} \quad (5)$$

The subscript $X=1970$ implies that in year t , we have fixed the X characteristics to remain at 1970 levels. Following Equations 2 and 3, we can produce indexed inequality trends (and the discordance between personal and household earnings inequality) when compositional features of interest are held constant:

$$\hat{\gamma}_{(t|x=1970)}^i = \left(\frac{\gamma_{(t|x=1970)}^i}{\gamma_{1970}^i} \right) - 1 \quad (6)$$

$$\sigma_{(t|x=1970)}^h = \hat{\gamma}_{(t|x=1970)}^{he} - \hat{\gamma}_{(t|x=1970)}^{pe} \quad (7)$$

We now have a measure of discordance due to the shift from personal to household earnings that is not driven by our compositional features of interest, given that those compositional features are held constant across all years. As such, the difference between our composition-constant discordance measure ($\sigma_{(t|x=1970)}^h$) and our standard discordance measure (σ_t^h) informs us of the aggregate influence of compositional changes on discordance between personal and household earnings inequality (specifically, the effect of composition on discordance is $\sigma_t^h - \sigma_{(t|x=1970)}^h$). After accounting for the aggregate effect of our compositional covariates, we can isolate which specific covariates affect the discordance over time in a manner similar to Equation 7. In Appendix A, we discuss which compositional features are included in our reweighting models.

2.3 Non-Labor Income Effects: Decomposing Discordance Between Household Earnings and Household Income Inequality

To further decompose σ_t^i , or the discordance between inequality trends based on household earnings versus household income, we isolate three sets of income components that generate the disconnect: income transfers (including near-cash transfers and refundable tax credits), tax liabilities, and private income. We further dissect income transfers into the contribution of specific transfer programs. For example, we can estimate the contribution of SNAP benefits to discordance in inequality trends. If SNAP benefits increasingly lift the incomes of households with low earnings, then SNAP should contribute to a declining σ_t^i with time. We can measure this as follows:

$$\sigma_t^{i\text{SNAP}} = (\hat{\gamma}_t^{hi} - \hat{\gamma}_t^{he}) - (\hat{\gamma}_t^{hi|\text{SNAP}=0} - \hat{\gamma}_t^{he}) = \hat{\gamma}_t^{hi} - \hat{\gamma}_t^{hi|\text{SNAP}=0} \quad (8)$$

Following Equation 8, the contribution of SNAP to σ_t^i is more negative (thus increasing discordance between household earnings versus income inequality) if excluding SNAP from household income ($\hat{\gamma}_t^{hi|\text{SNAP}=0}$) leads to a larger gap in household earnings versus income inequality trends compared to when including SNAP ($\hat{\gamma}_t^{hi}$). We apply this logic to each non-earnings income component in each year from 1970 onwards.

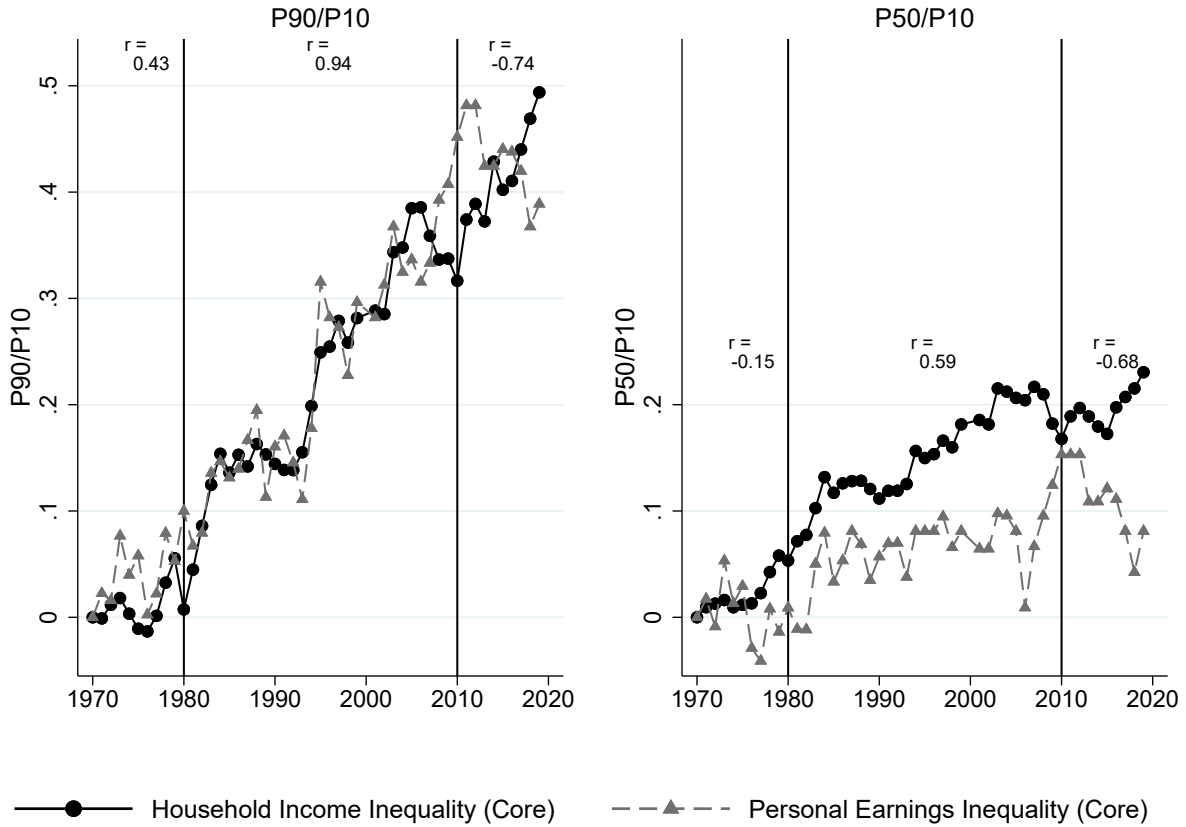
3 Results

3.1 Descriptive Trends in Inequality

Figure 1 presents personal and household income inequality trends among core workers using the P90/P10 ratio (left panel) and the P50/P10 ratio (right panel). Consistent with findings from Aepli and Wilmers (2022), we find a decline in personal earnings inequality from around 2010 through 2019. This is true with both the P90/P10 ratio and the P50/P10 ratio. This declining earnings inequality came after mostly consistent increases in inequality from 1970 through 2010.

Prior to 2010, income inequality generally increased hand-in-hand with earnings inequality. From 2010 onward, however, the trends diverged: while earnings inequality fell, income inequality continued to increase. Correlation in trends between the two measures declined from $r = 0.94$ between 1980 and 2010 to $r = -0.74$ between 2010 and 2019.

Figure 1: Inequality trends by income definition: personal earnings inequality and household income inequality, 1970–2019



Note: Authors’ analysis from the U.S. Current Population Survey. The sample includes core workers, defined as employed individuals between the ages of 16 and 64, who worked at least 20 hours per week on average, who worked at least 40 weeks per year, and who reported wages of at least \$4 per hour in 2018 USD. The vertical lines separate our three periods of interest: 1970–1980, 1980–2010, and 2010–2019. We provide results extended to 2022 in Appendix E. Each correlation coefficient in the figure represents the correlation of the inequality trends in each time period.

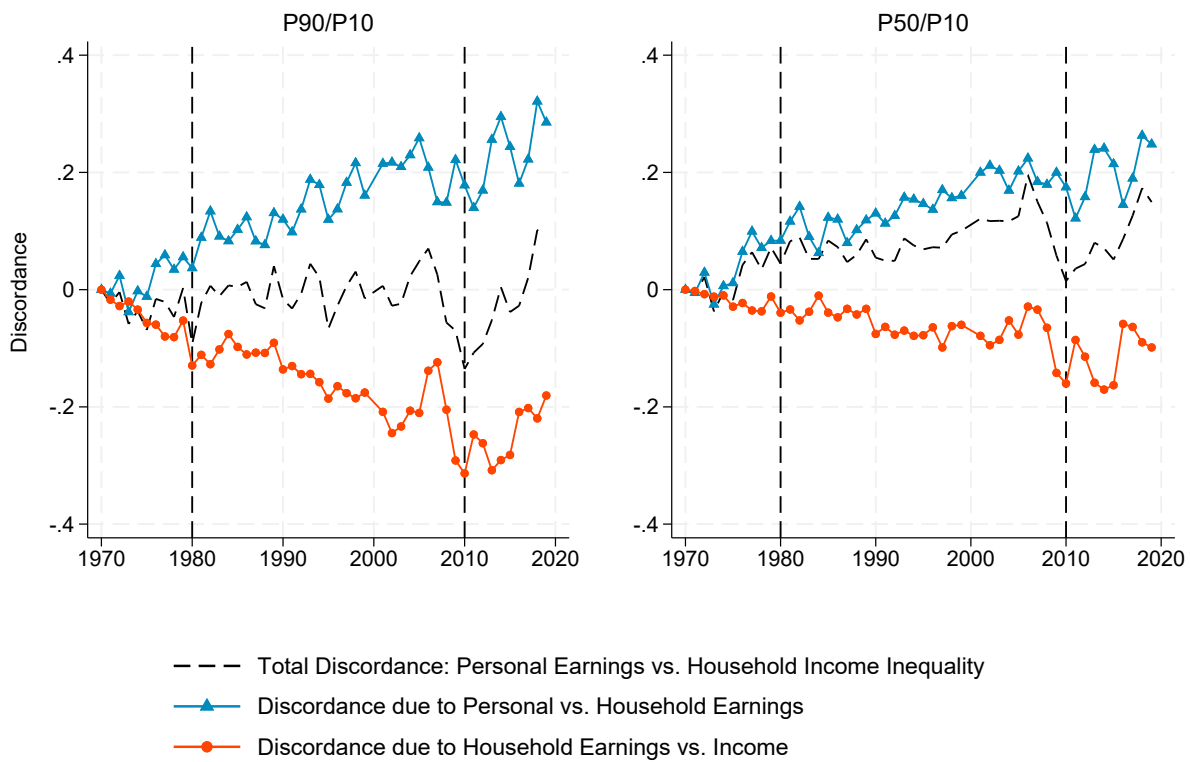
In Appendix Figure B1, we compare the P90/P10 trend for *personal* earnings versus *household* earnings inequality (left panel) and household *earnings* versus household *income* inequality (right panel) to provide a first indication of where the divergence between personal earnings and household income inequality originates. Although personal earnings inequality declined from 2010–2019, household earnings inequality increased (with a correlation of $r = -0.54$). In contrast, the trends evolved analogously from 1980 to 2010 ($r = 0.96$).

Appendix Figure B1 also shows that while household *earnings* inequality and

household *income* inequality both increased after 2010, there is notable discordance between the two measures ($r = 0.44$), especially compared to the close association of their trends ($r = 0.96$) from 1980 to 2010. These initial descriptive findings suggest that both household composition and non-labor income effects have contributed to the discordance between personal earnings and household income inequality after 2010.

3.2 Decomposition of Discordance in Inequality Trends

Figure 2: Trends in discordance between personal earnings and household earnings inequality, and between household earnings and household income inequality



Note: Authors’ analysis from the U.S. Current Population Survey following Equations 3 and 4. When “total discordance” is increasing, household income inequality is increasing at a greater rate than personal earnings inequality. The sample includes core workers, defined as employed individuals between the ages of 16 and 64, who work at least 20 hours per week on average, who work at least 40 weeks per year, and who report wages of at least \$4 per hour in 2018 USD. The vertical lines separate our three periods of interest: 1970–1980, 1980–2010, and 2010–2019. We provide results extended to 2022 in Appendix E.

Figure 2 presents results from Equations 3 and 4, which document the discordance

in personal earnings vs. household inequality trends due to (a) household composition effects, or discordance between personal vs. household earnings (blue triangles) and (b) non-labor income effects, or discordance between household earnings and income (red circles). The black dashed line is the total discordance and is, by definition, the sum of the blue and red lines. Note that the total discordance increased most dramatically from 2010 to 2019, our primary period of interest, suggesting that household income inequality became increasingly high relative to personal earnings inequality during this time span.

Across most years, the two discordance components evolve consistently: discordance due to household composition (personal vs. household earnings) steadily increases from 1970 onward. This aligns with broader evidence on the role of assortative mating, rising female labor force participation, and other family/economic demography trends that contribute to a more uneven pooling of household earnings (Kearney, 2023). The discordance due to non-labor income (household earnings vs. income) steadily declines, by contrast. This is consistent with the evidence of rising income transfers over time, especially the work-conditional transfers that are likely to reach workers around the 10th percentile of the earnings distribution (Nichols and Rothstein, 2015).

Between 2010 to 2019, however, the discordance due to non-labor income ends its decline and begins to increase, while the discordance due to household composition continues to rise, especially for the P90/P10 measure.

Appendix Table B2 summarizes the changes in inequality and changes in the discordance components for our three primary time periods of interest. Consistent with the evidence from Figure 2, the total discordance between household income and personal earnings inequality is largest from 2010 to 2019: a 24-percentage point gap between indexed changes in personal earnings vs. household income inequality. For the P90/P10 trend, the contribution of household composition (discordance due to personal vs. household earnings) is 11 percentage points of the overall 24-point discordance, while non-labor income (household earnings vs. income) explains the other 13 percentage points. The two are also approximately split for the P50/P10 ratio during the same time period (7 and 6 percentage points, respectively, of the overall 13 percentage point increase in discordance).

3.3 Decomposing Discordance Due to Personal vs. Household Earnings

We now decompose the discordance between personal and household earnings. Table 1 details the results of the RIF-KOB decomposition. We present the compositional effect on discordance between personal and household earnings inequality for each examined period.

Our findings indicate that observed changes in household composition explain 8 out of the 11 percentage points of the discordance in P90/P10 inequality, and 2 out of the 7 percentage points in P50/P10 inequality, upon aggregating the contributions of individual characteristics.

The presence of secondary earners is the single largest contributing factor to the discordance in the 2010–2019 period, amounting to 9 percentage points for discordance in P90/P10 inequality and 4 percentage points for discordance in P50/P10 inequality. This contrasts with the 1980–2010 period, where secondary earners reduced discordance in comparable magnitudes. Although the proportion of households with secondary earners has steadily increased from about 21 percent to 29 percent since 1970, their distribution across different income levels has shifted unevenly (see Appendix F).

Further, we find that marital status contributes to discordance, with its impact of 5-7 percentage points remaining relatively stable throughout the entire 1970–2019 period, though not specifically characteristic after 2010. Other household characteristics had minor contributions from 2010 to 2019.

Changes in household types contributed to the discordance in P50/P10 inequality but not to discordance in P90/P10 inequality over the 2010–2019 period. Specifically, the increasing prevalence of childless households with three or more cohabitating adults (e.g., working-age adults living with their parents), as well as childless single households, played a meaningful role. The former reflects the phenomenon of young adults in lower-earning households continuing to live with their parents after reaching adulthood. The latter results from a rise in the number of lower-earning adults living alone, either after moving out or in old age.

Secondary earners: Given the large role of secondary earners in driving discordance between 2010-2019, we further investigate the characteristics of this group in Appendix F. Three main findings summarize the contributions of secondary earners to discordance in inequality trends.

Table 1: Drivers of change in discordance due to personal vs. household earnings by time period

	P90/P10			P50/P10		
	1970–1980	1980–2010	2010–2019	1970–1980	1980–2010	2010–2019
Δ in: Discordance due to						
Personal vs. Household Earnings	0.02	0.14	0.11	0.07	0.09	0.07
Driven by All Compositional Changes in HH	0.01	0.03	0.08	0.04	-0.04	0.02
...Secondary Earner	-0.01	-0.09	0.09	0.01	-0.07	0.04
...Share of Adult	-0.04	0.01	-0.01	-0.01	-0.01	0.01
...Share of Male	-0.06	0.03	-0.01	-0.03	0.00	0.02
...Share of Married	0.07	0.05	0.07	0.05	-0.00	0.02
...Share of Retired	-0.06	0.03	-0.03	-0.03	0.00	0.01
...Nr of Children	-0.06	0.05	-0.00	-0.05	0.02	0.03
All Household Types						
...1 Adult, no Children	-0.05	0.07	0.00	-0.04	0.03	0.03
...1 Adult, Children	-0.03	0.02	-0.02	-0.03	0.02	0.01
...2 Adults, no Children	-0.05	0.02	-0.02	-0.02	-0.00	0.02
...2 Adults, Children	0.05	-0.05	0.01	0.04	-0.04	0.02
...3+ Adults, no Children	-0.05	0.02	-0.02	-0.02	-0.00	0.02
...3+ Adults, Children	-0.04	0.00	0.01	-0.01	-0.03	0.04

Note: All values are percentage point changes in indexed P90/P10 and P50/P10 ratio from the first to second year.

First, secondary earners often have high household incomes despite their low relative earnings. In 2019, more than 40 percent of secondary earners in the bottom quartile of the personal earnings distribution were in the top half of the household income distribution (see Table F1). The share of lower-pay secondary earners in households within the bottom quartile of the household income distribution decreased from 53.5 percent to 50.7 percent between 2010 and 2019, in contrast to the trend in prior decades.

Second, we find that secondary earners are an increasingly important component of the bottom personal earnings quartile. In 2019, the share of total earnings in this quartile belonging to secondary earners reached 52 percent, an increase of 4.5 percentage points since 2010 (see Figure F1). Again, this is in contrast to trends in prior decades, but consistent with the rising importance of secondary earners in driving discordance in inequality trends after 2010.

Third, we find that secondary earners are increasingly young workers living in a household with their parents (as opposed to spouses or other members of the household). From 2010 to 2019, the share of secondary earners who were children of the household head increased from 16 percent to 20.1 percent, the latter being a record high (see Table F2). Relatedly, the share of all core workers between ages 16 to 30 who live with their parents increased steadily from 2010, reaching a record-high in 2019 (see Figure F2).¹⁰

¹⁰The median age of working adults living with their parents in the bottom quartile of the earnings distribution increased from 23 years (2010) to 25 years (2019), suggesting delayed exit from parental homes

In turn, the relative earnings weight of this group increased. Among secondary earners in the bottom quartile of the personal earnings distribution, the share of total earnings belonging to “workers living with their parents” increased steadily from 2010, and by 2019, had surpassed the share of earnings belonging to spouses (see Figure F3). Secondary earners living with their parents also tend to work in occupations that were lower-pay in 2010, yet experienced the largest relative earnings growth from 2010 to 2019 (see Figures F4 and F5), consistent with this group contributing to declining personal earnings inequality.¹¹

Finally, we re-estimate inequality trends when removing secondary earners altogether (Figure H3). Personal earnings inequality among lead earners continued to increase for P90/P10 after 2010, in contrast to the decline observed when secondary earners were included. This trend further reinforces the important role of secondary earners in shaping discordance in inequality.

3.4 Decomposing Discordance Due to Household Earnings vs. Household Income Inequality

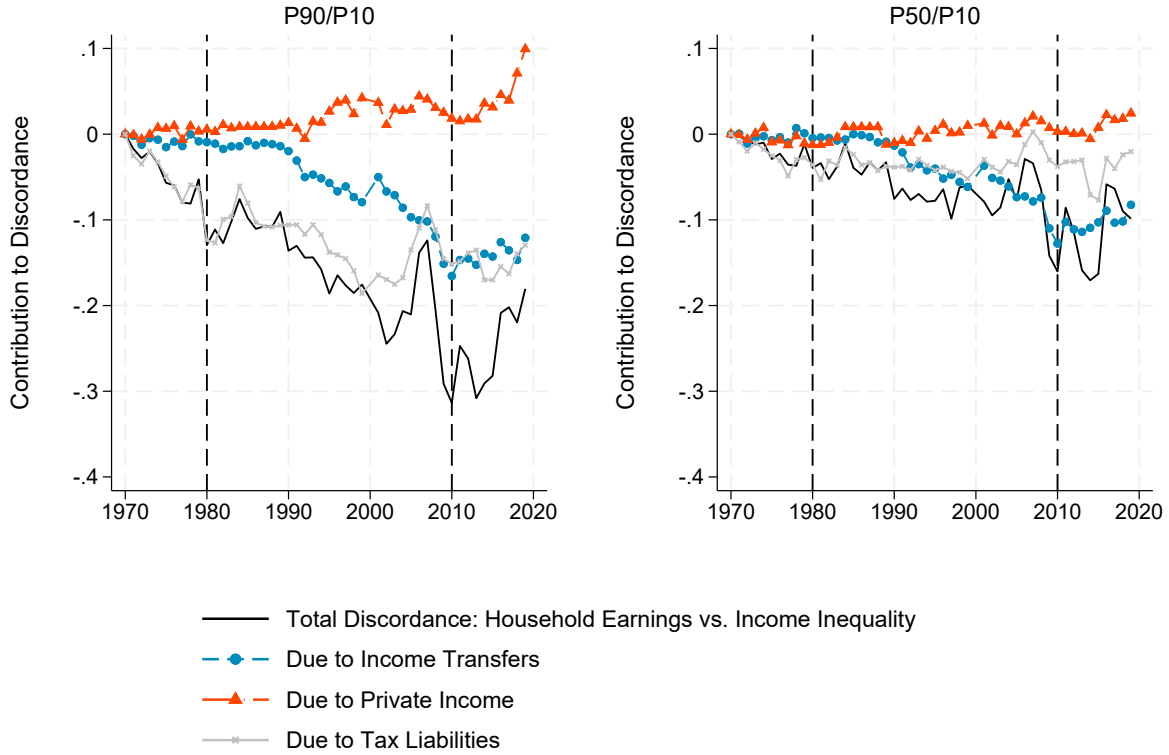
Recall that we segment discordance due to non-labor income (household earnings vs. household income inequality) into three primary income components: tax liabilities, income transfers, and private income. The solid black line (total discordance due to non-labor income) in Figure 3 is identical to what is presented in Figure 2. Declining discordance indicates that household earnings inequality is rising faster than household income inequality, which can be the result of increased government income transfers targeted at lower-wage workers. Generally, tax liabilities and income transfers tend to contribute to negative discordance given that household income inequality increases at a lower rate than household earnings inequality. By contrast, private income generally contributes to positive discordance given that their inclusion increasingly contributes to higher income inequality relative to earnings inequality.

From 2010 onward, however, all three sub-components trended upward, contributing to higher income inequality relative to household earnings inequality. Specifically, income transfers contributed to a 4 percentage point increase in the P90/P10 discordance (in contrast to a -14 percentage point contribution from 1980 to 2010), while changes in tax liabilities

and longer pooling of resources between parents and children.

¹¹The Great Recession and the subsequent economic recovery likely contributed to several of these trends, given that secondary earners’ employment is more sensitive to the business cycle; see supporting evidence from the Panel Study of Income Dynamics in Appendix F).

Figure 3: Drivers of discordance between household earnings and household income inequality: tax liabilities, income transfers, and private income

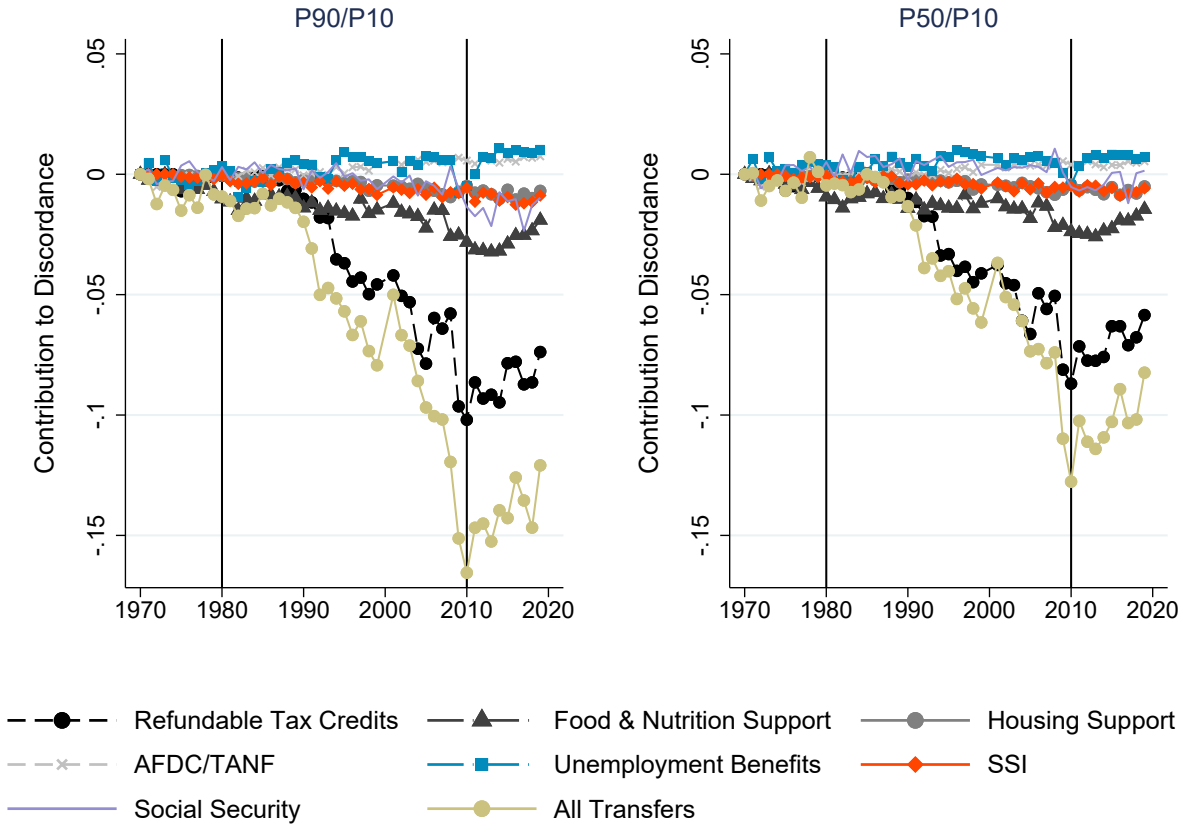


Note: Authors’ analysis from the U.S. Current Population Survey. The figures’ results stem from Equation 8. When “discordance” is increasing, household income inequality is increasing at a greater rate than household earnings inequality. Income transfers include cash and near-cash benefits, as well as refundable tax credits. Private income includes income from rent, dividends, interest on investments, private pensions, worker’s compensation, veteran’s benefits, survivor’s benefits, private education assistance, child support payments, or private transfers.

contributed to a 2 percentage point increase. For the P90/P10 discordance, however, the largest contribution was the 8 percentage point increase due to private income, which explains more than half the increase in overall discordance due to household earnings vs. income inequality. For the P50/P10 discordance, changes in income transfers instead explain more than half the discordance from 2010 to 2019.

Income transfers: Figure 4 offers further detail on the particular changes to income transfers that drove discordance in inequality measures. Refundable tax credits (the EITC, in particular) largely drove the overall contribution of income transfers to discordance between household earnings vs. income inequality. During the Great Recession, refundable

Figure 4: Drivers of discordance between household earnings and household income inequality: the contribution of specific income transfer programs



Note: Authors’ analysis from the U.S. Current Population Survey. The figure’s results stem from Equation 8. When discordance is increasing, household income inequality is increasing at a greater rate than household earnings inequality. Refundable tax credits primarily include the Earned Income Tax Credit and Child Tax Credit. Food and Nutrition Support includes benefits from SNAP, WIC, and school lunches. Housing Support includes the capped value of all housing subsidies and energy assistance. AFDC/TANF refers to cash payments from Aid to Families with Dependent Children and Temporary Assistance for Needy Families. SSI refers to Supplemental Security Income.

tax credits played a particularly important role in reducing inequality (see the large decline between 2007 and 2010, for example), and this effect began to gradually return to its pre-crisis level from 2010 to 2019. Food and nutrition support (SNAP, especially) also saw a gradual return to pre-crisis levels from 2010 to 2019, contributing to discordance.

In Appendix Figure C1, we provide additional evidence of changes in income transfers across the household earnings distribution. Consistent with the discordance observed

in Figure 4, we find that, in contrast to previous decades, the EITC, SNAP, Unemployment Insurance benefits, and total transfers all declined more steeply for households at the 10th percentile of household earnings distribution relative to the 50th or 90th percentiles. Declining SNAP and EITC benefit payments in our data are consistent with trends in administrative reports between 2010 and 2019 (Congressional Research Service, 2022), and do not appear to be due to changes in benefit underreporting (see Appendix G). We further show that the declining redistributive role of the EITC and SNAP is due both to extensive margin (i.e., declining benefit participation, and declining eligibility specifically) and intensive margin (i.e., declining benefit levels conditional on participation) effects.¹² Given that the income-based eligibility criteria for SNAP and the EITC did not meaningfully change (in real terms) between 2010 and 2019, declining eligibility is channeled through higher real incomes. The same is true for EITC benefit levels among recipients, though the decline in SNAP benefit levels among recipients is also due to the expiration of temporary benefit enhancements as part of the American Recovery & Reinvestment Act of 2009.

Put differently, the compositional changes discussed before (namely, more low-pay workers co-residing with their parents, thus having larger pooled incomes) and real earnings gains across the personal and household earnings distributions (see Appendices H and F) have largely contributed to the declining eligibility for SNAP and EITC benefits from 2010 to 2019. In turn, the decline in income transfers targeted at the bottom of the household earnings distribution helps to explain the recent discordance between household earnings and income inequality.

3.5 Sensitivity Tests and Alternative Results

We provide several sensitivity tests and alternative results. In Appendix E, we extend results through 2022 to include the COVID-19 pandemic and subsequent declines in personal earnings inequality. Our core findings remain unchanged. In Appendix F, we provide further details on the secondary earners who drive our household composition effects using both the CPS ASEC and the Panel Study of Income Dynamics. In Appendix G, we account for SNAP benefit underreporting in the CPS ASEC from 2010 to 2019. Adjustments for underreporting do not meaningfully affect our trends in discordance. In Appendix H, we present growth

¹²Given the Census Bureau simulates 100 percent take-up of the EITC for tax units deemed eligible, declining EITC participation indicates declining eligibility rather than declining participation among the eligible. Though segmenting eligibility and take-up is more challenging for SNAP and other programs, the labor market trends from 2010 to 2019 suggest that declining eligibility is the larger driver.

incidence curves that further document changes in each of our three income components across the full income distribution.

4 Conclusions

From 2010 to 2019, personal earnings inequality declined in the U.S., a stark reversal after five consecutive decades of rising inequality. During the same period, however, household income inequality continued to increase. Trends in personal earnings and household income inequality were more discordant between 2010 and 2019 than in any other decade in recent U.S. history. What explains the discordant trends?

Particularly between 1980 and 2010, personal earnings inequality and household income inequality increased hand-in-hand. Using the P90/P10 ratio, personal earnings inequality grew 35 percent, whereas household income inequality grew 31 percent, the discordance thus amounting to 4 percentage points. Underlying the low level of discordance, however, are household composition effects and non-labor income effects moving in opposite directions during this time period. Changes to household composition contributed to household earnings inequality growing at a faster rate than personal earnings inequality. These effects were more than offset, however, by a growing social safety net: changes in the distribution of income transfers, as well as small contributions from changing tax liabilities, contribute to household income inequality growing at a slower rate than household earnings inequality. The net result of these opposing forces was comparable growth in personal earnings and household income inequality from 1980 to 2010.

From 2010 through 2019, however, discordance reached its peak: household income inequality increased by 18 percent, despite a 6 percent decline in personal earnings inequality. The difference, 24 percentage points, marks the total discordance. Of this overall discordance, 11 percentage points (46 percent) is attributable to household composition effects. This is largely driven by an increase in young workers living with their parents (which reached a record-high in 2019), and greater relative earnings growth in occupations that feature larger shares of younger workers. As secondary earners, young workers typically fall at the lower end of the personal earnings distribution, yet reside in households that command substantially higher incomes. In fact, personal earnings inequality continued its rise among the lead earners of households, despite declining when secondary earners are included in the sample (Figure H3).

Non-labor income effects made up the majority of the discordance (the remaining 13 percentage points, or 54 percent). The positive discordance due to non-labor income signifies that taxes, transfers, and private income sources were not as strong in reducing the gap between household earnings and household income inequality in 2019 as they were in 2010. With respect to the P90/P10 ratio, this is mostly due to private income sources: income from rent, dividends, and other private sources led to higher growth in household income inequality relative to household earnings inequality. For both the P90/P10 ratio and the P50/P10 ratio, taxes and transfers also increased discordance: changes to the distribution of SNAP and EITC benefits, in particular, reduced the extent to which these two programs offset increases in household earnings inequality. The declining value of these benefits for lower-earning workers occurred primarily on extensive rather than intensive margin (participation, and eligibility specifically, rather than benefit levels) and is consistent with rising household incomes among lower-pay workers.

In 1975, Atkinson expressed caution regarding research that “has focused exclusively on wage differentials and not asked whether such differences are associated with [income] inequality.” This study responds to Atkinson by offering researchers a framework for decomposing earnings and income inequality. Despite the historic decline in personal earnings inequality from 2010 to 2019, our findings show that the changing household composition of workers at the bottom of the earnings distribution, the growth of private income among high-earning households, and a decline in the provision of government income support have contributed to a simultaneous increase in household income inequality.

References

- Acemoglu, D. (2024). Clarifying America’s Great Inequality Debate | by Daron Acemoglu. <https://www.project-syndicate.org/commentary/inequality-different-metrics-but-larger-trend-still-a-pro>
- Aeppli, C. and Wilmers, N. (2022). Rapid wage growth at the bottom has offset rising US inequality. *Proceedings of the National Academy of Sciences*, 119(42):e2204305119.
- Ahrens, A., Hansen, C. B., and Schaffer, M. E. (2020). Lasso pack: Model selection and prediction with regularized regression in Stata. *The Stata Journal*, 20(1):176–235.
- Atkinson, A. B. (1975). *The Economics of Inequality*. Clarendon Press, Oxford.
- Atkinson, A. B. (2019). *Measuring Poverty around the World*. Princeton University Press, Princeton, NJ.
- Auten, G. and Splinter, D. (2023). Income Inequality in the United States: Using Tax Data to Measure Long-Term Trends. *Journal of Political Economy*, page 728741.
- Autor, D., Dube, A., and McGrew, A. (2023). The Unexpected Compression: Competition at Work in the Low Wage Labor Market. *NBER Working Paper*.
- Autor, D. H. (2014). Skills, education, and the rise of earnings inequality among the “other 99 percent”. *Science*, 344(6186):843–851.
- Autor, D. H., Katz, L. F., and Kearney, M. S. (2008). Trends in U.S. Wage Inequality: Revising the Revisionists. *Review of Economics and Statistics*, 90(2):300–323.
- Citro, C. F. and Michael, R. T., editors (1995). *Measuring Poverty: A New Approach*. Panel on Poverty and Family Assistance (United States). National Academy Press, Washington, D.C.
- Congressional Research Service (2022). The Earned Income Tax Credit (EITC): Legislative History. Version 10. Updated. Technical Report R44825, United States Congress, Washington D.C.
- DiNardo, J., Fortin, N. M., and Lemieux, T. (1996). Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semiparametric Approach. *Econometrica*, 64(5):1001–1044.

- Firpo, S., Fortin, N. M., and Lemieux, T. (2009). Unconditional Quantile Regressions. *Econometrica*, 77(3):953–973.
- Firpo, S. P., Fortin, N. M., and Lemieux, T. (2018). Decomposing Wage Distributions Using Recentered Influence Function Regressions. *Econometrics*, 6(2).
- Fortin, N., Lemieux, T., and Firpo, S. (2011). Decomposition Methods in Economics. In *Handbook of Labor Economics*, pages 1–102. Elsevier.
- Fry, R., Passel, J. S., and Cohn, D. (2020). A majority of young adults in the U.S. live with their parents for the first time since the Great Depression.
- Hoynes, H., Schanzenbach, D. W., and Almond, D. (2016). Long-Run Impacts of Childhood Access to the Safety Net. *American Economic Review*, 106(4):903–934.
- Hoynes, H. W. and Patel, A. J. (2018). Effective Policy for Reducing Poverty and Inequality?: The Earned Income Tax Credit and the Distribution of Income. *Journal of Human Resources*, 53(4):859–890.
- Katz, L. F. and Murphy, K. M. (1992). Changes in Relative Wages, 1963–1987: Supply and Demand Factors*. *The Quarterly Journal of Economics*, 107(1):35–78.
- Kearney, M. S. (2023). *The Two-Parent Privilege: How Americans Stopped Getting Married and Started Falling Behind*. The University of Chicago Press, Chicago.
- Kristal, T. (2013). The Capitalist Machine: Computerization, Workers’ Power, and the Decline in Labor’s Share within U.S. Industries. *American Sociological Review*, 78(3):361–389.
- Lemieux, T. (2006). Increasing Residual Wage Inequality: Composition Effects, Noisy Data, or Rising Demand for Skill? *American Economic Review*, 96(3):461–498.
- Liu, Y. and Grusky, D. B. (2013). The Payoff to Skill in the Third Industrial Revolution. *American Journal of Sociology*, 118(5):1330–1374.
- Milanović, B. (2023). *Visions of Inequality: From the French Revolution to the End of the Cold War*. The Belknap Press of Harvard University Press, Cambridge, Massachusetts ; London, England.

- Mittag, N. (2019). Correcting for Misreporting of Government Benefits. *American Economic Journal: Economic Policy*, 11(2):142–164.
- Mouw, T. and Kalleberg, A. L. (2010). Occupations and the Structure of Wage Inequality in the United States, 1980s to 2000s. *American Sociological Review*, 75(3):402–431.
- Nichols, A. and Rothstein, J. (2015). The Earned Income Tax Credit. In *Economics of Means-Tested Transfer Programs in the United States, Volume 1*, pages 137–218. University of Chicago Press.
- Parolin, Z. (2023). *Poverty in the Pandemic: Policy Lessons from COVID-19*. Russell Sage, New York.
- Parolin, Z. and Filauro, S. (2023). The United States’ Record-Low Child Poverty Rate in International and Historical Perspective: A Research Note. *Demography*, page 11064017.
- Piketty, T., Saez, E., and Zucman, G. (2018). Distributional National Accounts: Methods and Estimates for the United States*. *The Quarterly Journal of Economics*, 133(2):553–609.
- Rios-Avila, F. (2020). Recentered influence functions (RIFs) in Stata: RIF regression and RIF decomposition. *The Stata Journal*, 20(1):51–94.
- Song, J., Price, D. J., Guvenen, F., Bloom, N., and von Wachter, T. (2019). Firming Up Inequality. *The Quarterly Journal of Economics*, 134(1):1–50.
- UNECE, U. N. E. C. f. E. (2011). *Canberra Group Handbook on Household Income Statistics. United Nations Economic Commission for Europe*. United Nations, second edition edition.
- Western, B. and Rosenfeld, J. (2011). Unions, Norms, and the Rise in U.S. Wage Inequality. *American Sociological Review*, 76(4):513–537.
- Wilmers, N. (2018). Wage Stagnation and Buyer Power: How Buyer-Supplier Relations Affect U.S. Workers’ Wages, 1978 to 2014. *American Sociological Review*, 83(2):213–242.

Appendices

A Appendix: Description of RIF-KOB Estimates

The Kitigawa-Oaxaca-Blinder (KOB) analysis allows us to decompose the difference between earnings inequality Δv between T_0 and T_n in a composition and a structure effect:

$$\Delta y = \overbrace{(y_1 - y_c)}^{\Delta y_S} + \overbrace{(y_c - y_0)}^{\Delta y_X} \quad (\text{A1})$$

where Δy_X reflects the gap attributed to differences in (observable) household characteristics (composition effect), and Δy_S reflects the differences attributed to the relationships between Y and X (structure effect) that is not explained by the observable characteristics. In our application, the composition effect describes the change of earnings inequality Y due to changing shares of workers with a specific set of characteristics.

To identify how each isolated covariate contributes to the difference in the outcome along the distribution (i.e., beyond the mean), we apply recentered influence functions (RIF) and combine them with KOB (Rios-Avila 2020). We estimate RIF regressions for each year to obtain the counterfactual statistics for $\hat{\gamma}_{(t|x=1970)}$ along the distribution. We obtain an approximation for the counterfactual distribution by multiplying the observed distribution of characteristics $dF_{X|T=0}$ with a factor $\omega(X)$, so it resembles the distribution $dF_{X|T=1}$. After obtaining the reweighting factors, we estimate the RIF regressions mirroring the KOB decomposition:

$$v_c^- \mathbb{E}[\text{RIF}\{y, c(F_Y^C)\}] = \bar{X}^c \hat{\beta}^c \quad (\text{A2})$$

We obtain the following decomposition components:

$$\Delta v = \overbrace{(\bar{X}^{(1)'}) (\hat{\beta}_1 - \hat{\beta}_c)}^{\Delta v_s^p} + \overbrace{((\bar{X}^1 - \bar{X}^c)' \hat{\beta}_c)}^{\Delta v_s^e} + \overbrace{((\bar{X}^c - \bar{X}^0)' \hat{\beta}_0)}^{\Delta v_X^p} + \overbrace{(\bar{X}^{(c)'}) (\hat{\beta}_c - \hat{\beta}_0)}^{\Delta v_X^e} \quad (\text{A3})$$

The components $\Delta v_s^p + \Delta v_s^e$ correspond to the KOB aggregate wage structure effect, whereas $\Delta v_X^p + \Delta v_X^e$ correspond to the aggregate composition effect. These two components are further decomposed into a pure wage structure (Δv_s^p) and pure composition effect (Δv_X^p), plus two components that can be used to assess the overall fitness of the model. We use a least absolute shrinkage and selection operator (LASSO) approach with cross-validation to

maximise the fit of our logit model used for the estimation of reweighting factors (Ahrens et al., 2020).

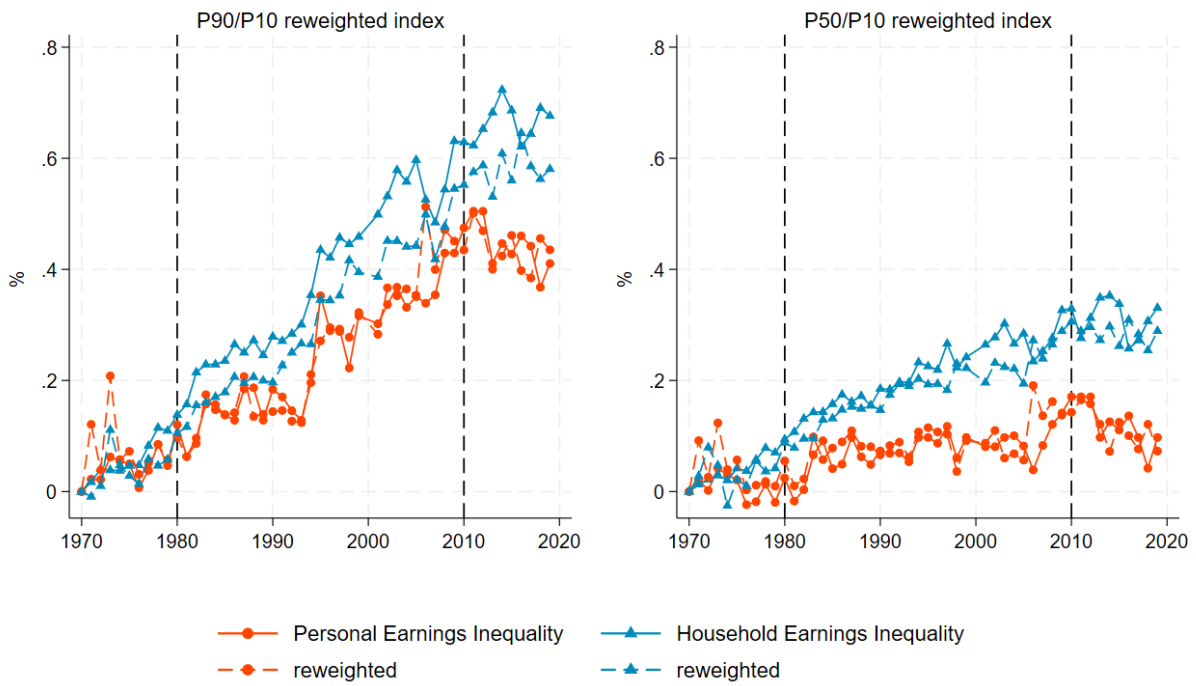
We reweight the composition of households by observable household characteristics that can be grouped including the presence of secondary earners, the share of adults, male, married, and retired household members, and the average number of children per household. We also group households by the number of adults and presence of children and reweight each of these types separately. Table A1 provides an overview of the variables used for the reweighting procedure.

Table A1: Variables used for the RIF-KOB Decomposition

	1970		1980		2010		2019	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Personal Earnings	8,465.43	5,701.16	16,462.43	10,036.15	51,892.17	58,468.41	68,295.57	81,334.25
Household Earnings	12,749.07	7,237.82	26,337.94	14,208.12	86,842.31	80,497.64	119,736.59	120,565.70
Household Characteristics								
Secondary Earner	0.21	0.41	0.24	0.43	0.27	0.44	0.29	0.45
Share of Adult	2.26	0.80	2.23	0.88	2.22	0.91	2.23	0.93
Share of Male								
Share of Married	0.83	0.38	0.74	0.44	0.64	0.48	0.63	0.48
Share of Retired	0.07	0.29	0.05	0.24	0.07	0.28	0.10	0.34
Nr of Children	1.24	1.43	0.92	1.15	0.80	1.09	0.74	1.07
All Household Types								
1 Adult, no Children	0.07	0.25	0.10	0.30	0.12	0.32	0.12	0.32
1 Adult, Children	0.02	0.13	0.03	0.17	0.03	0.18	0.03	0.17
2 Adults, no Children	0.25	0.43	0.26	0.44	0.29	0.45	0.29	0.46
2 Adults, Children	0.37	0.48	0.33	0.47	0.27	0.45	0.25	0.44
3+ Adults, no Children	0.13	0.34	0.14	0.34	0.16	0.36	0.18	0.38
3+ Adults, Children	0.17	0.37	0.14	0.35	0.13	0.33	0.12	0.33
Observations	37,766		53,888		68,871		54,377	

Note: Earnings, age, and unemployment duration are continuous measures. All other variables show the mean and standard deviation for the share of household members in the respective category.

Figure A1: Trends in personal earnings inequality and household earnings inequality, before and after adjusting for compositional differences from the 1970 population



Note: Authors' analysis from the U.S. Current Population Survey. The results follow Equation 6.

B Appendix: Further Detail on Sample and Measures

Table B1: Primary income concepts used to study trends in inequality

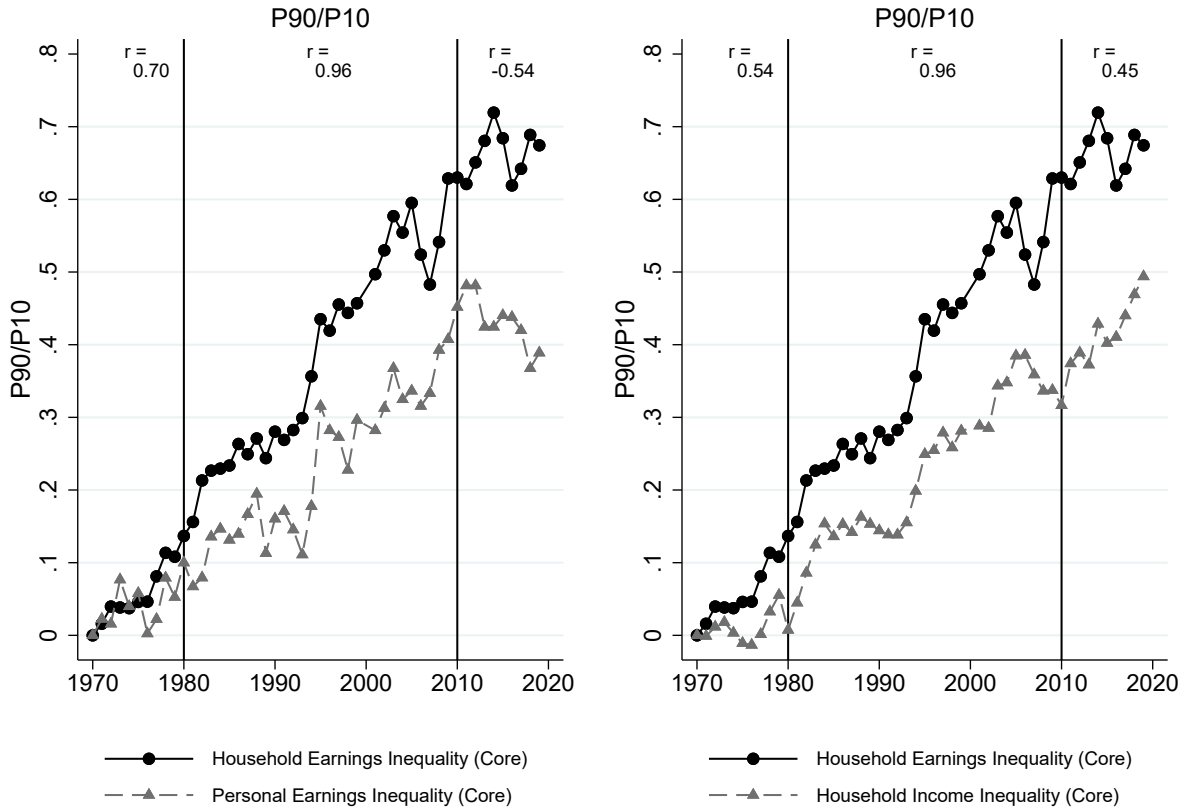
Income Component	Label	Unit of Analysis	Description
Personal earnings	pe	Individual	Annual earnings from employment
Household earnings	he	Household	Annual earnings from employment among all household members
Household income	hi	Household	Annual income (inclusive of all taxes and transfers) among all household members

Table B2: Change in discordance by time period

	P90/P10			P50/P10		
	1970 to	1980 to	2010 to	1970 to	1980 to	2010 to
	1980	2010	2019	1980	2010	2019
Δ in: Household Income Inequality	0.01	0.31	0.18	0.05	0.11	0.06
Δ in: Personal Earnings Inequality	0.10	0.35	-0.06	0.01	0.14	-0.07
Δ in: Total Discordance	-0.09	-0.04	0.24	0.04	-0.03	0.13
Δ in: Discordance Due to Personal vs. Household Earnings	0.04	0.14	0.11	0.08	0.09	0.07
Δ in: Discordance due to Household Earnings vs. Income	-0.13	-0.18	0.13	-0.04	-0.12	0.06

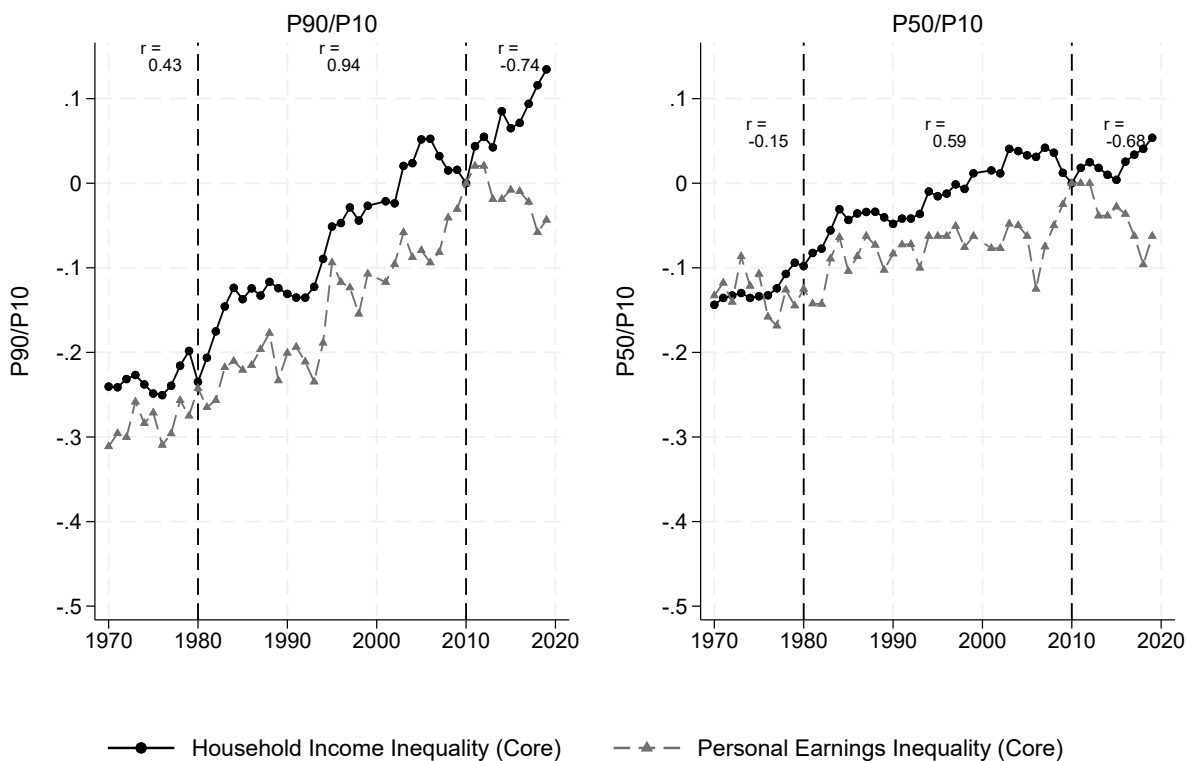
Note: Authors' analysis from the CPS ASEC. The table summarizes the values presented in Figure 2.

Figure B1: Inequality trends by income definition: personal earnings inequality vs. household earnings inequality (left) and household earnings vs. household income inequality (right), 1970 – 2019; P90/P10; core workers and their households



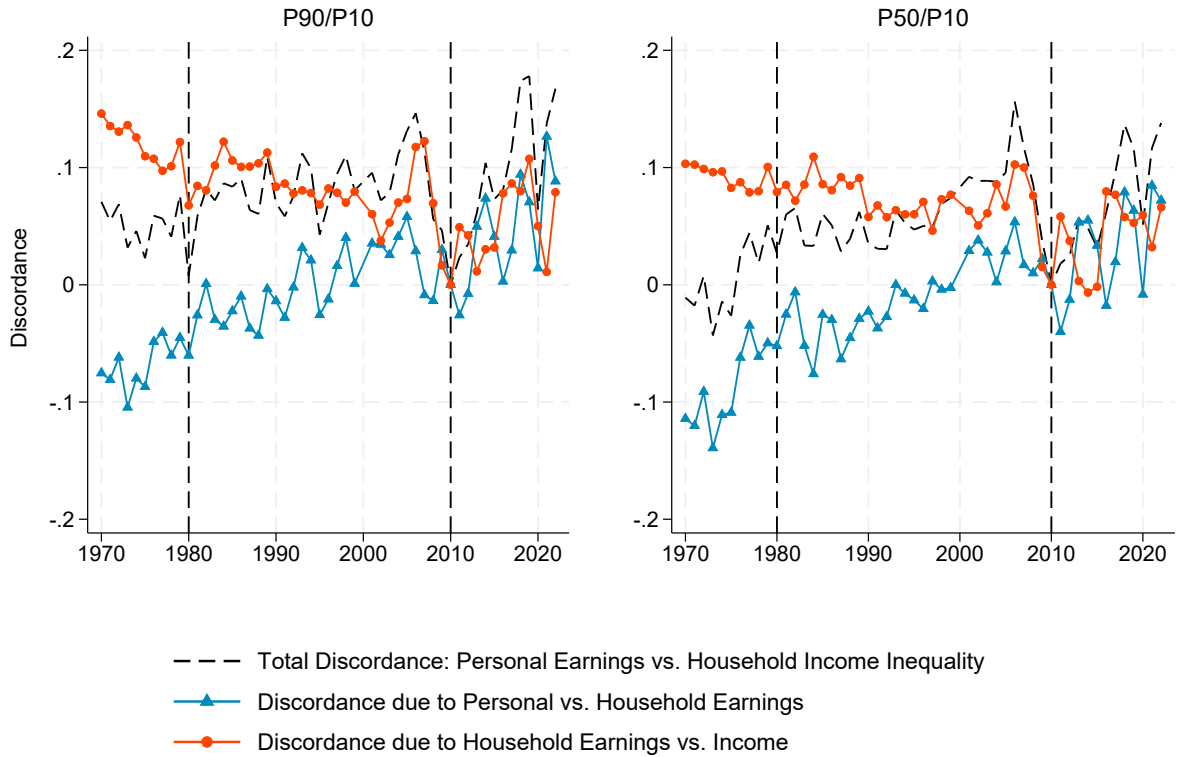
Note: Authors' analysis from the U.S. Current Population Survey. The sample includes core workers, defined as employed individuals between the ages of 16 and 64, who worked at least 20 hours per week on average, who worked at least 40 weeks per year, and who reported wages of at least \$4 per hour in 2018 USD. The vertical lines separate our three periods of interest: 1970–1980, 1980–2010, and 2010–2019.

Figure B2: Inequality trends indexed to the baseline year of 2010



Note: Authors' analysis from the U.S. Current Population Survey. The sample includes core workers, defined as employed individuals between the ages of 16 and 64, who worked at least 20 hours per week on average, who worked at least 40 weeks per year, and who reported wages of at least \$4 per hour in 2018 USD. The vertical lines separate our three periods of interest: 1970–1980, 1980–2010, and 2010–2019.

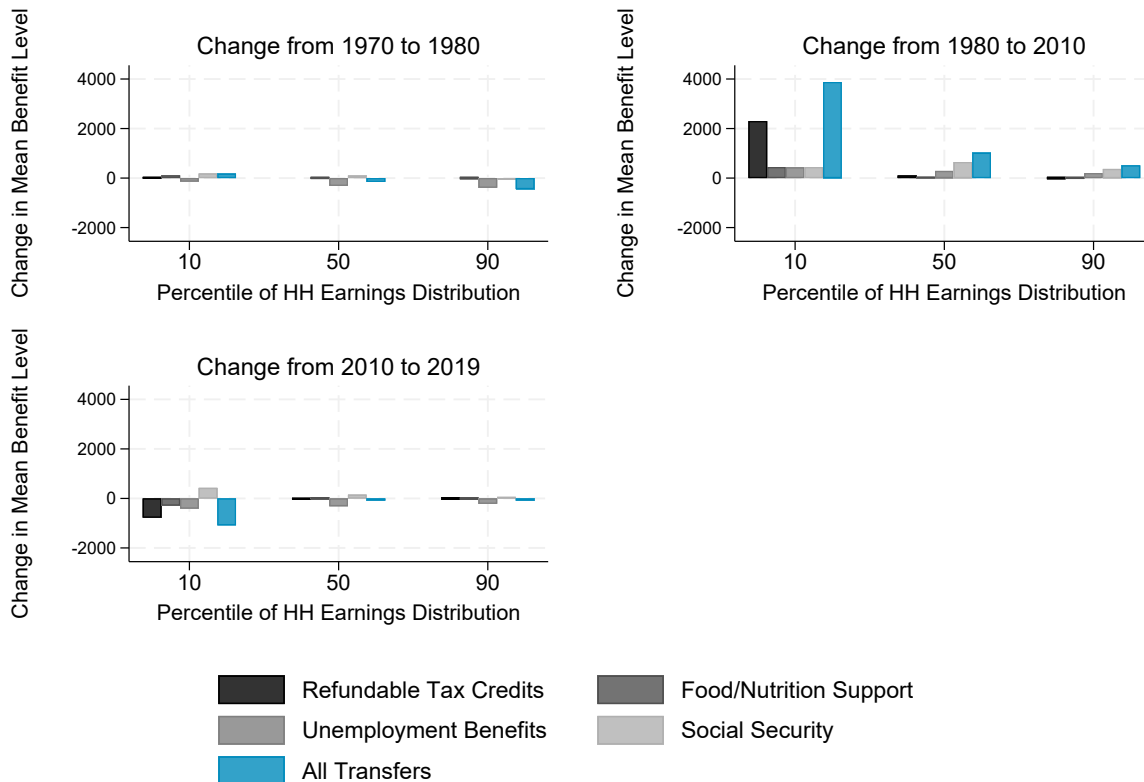
Figure B3: Discordance in inequality trends indexed to the baseline year of 2010



Note: Authors' analysis from the U.S. Current Population Survey following Equations 3 and 4. When “total discordance” is increasing, household income inequality is increasing at a greater rate than personal earnings inequality. The sample includes core workers, defined as employed individuals between the ages of 16 and 64, who worked at least 20 hours per week on average, who worked at least 40 weeks per year, and who reported wages of at least \$4 per hour in 2018 USD. The vertical lines separate our three periods of interest: 1970–1980, 1980–2010, and 2010–2019.

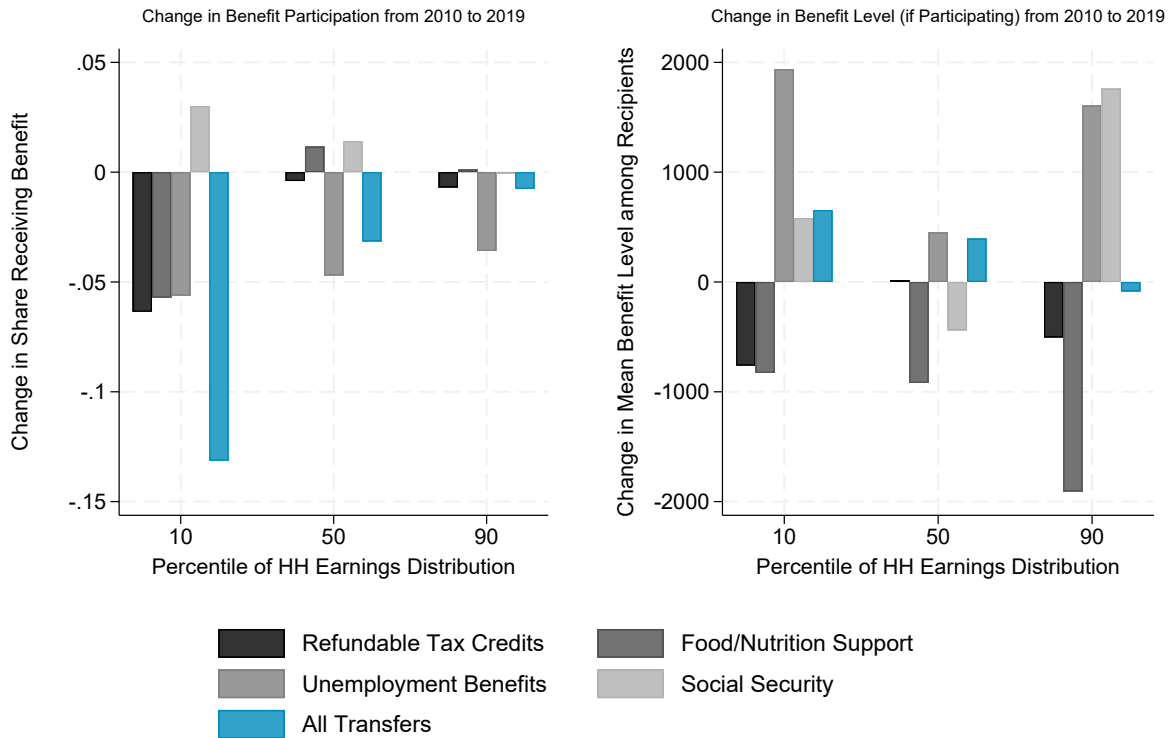
C Appendix: Changes in Income Transfers Across the Personal Earnings Distribution

Figure C1: Change in real benefit levels by program, time period, and percentile of the household earnings distribution



Note: The figure plots the change in real mean benefit levels among individuals at the specified percentile of the household earnings distribution. All benefit levels are adjusted for inflation using the PCE. Refundable tax credits primarily include the Earned Income Tax Credit and Child Tax Credit. Food and Nutrition Support includes benefits from SNAP (primarily), WIC, and school lunches.

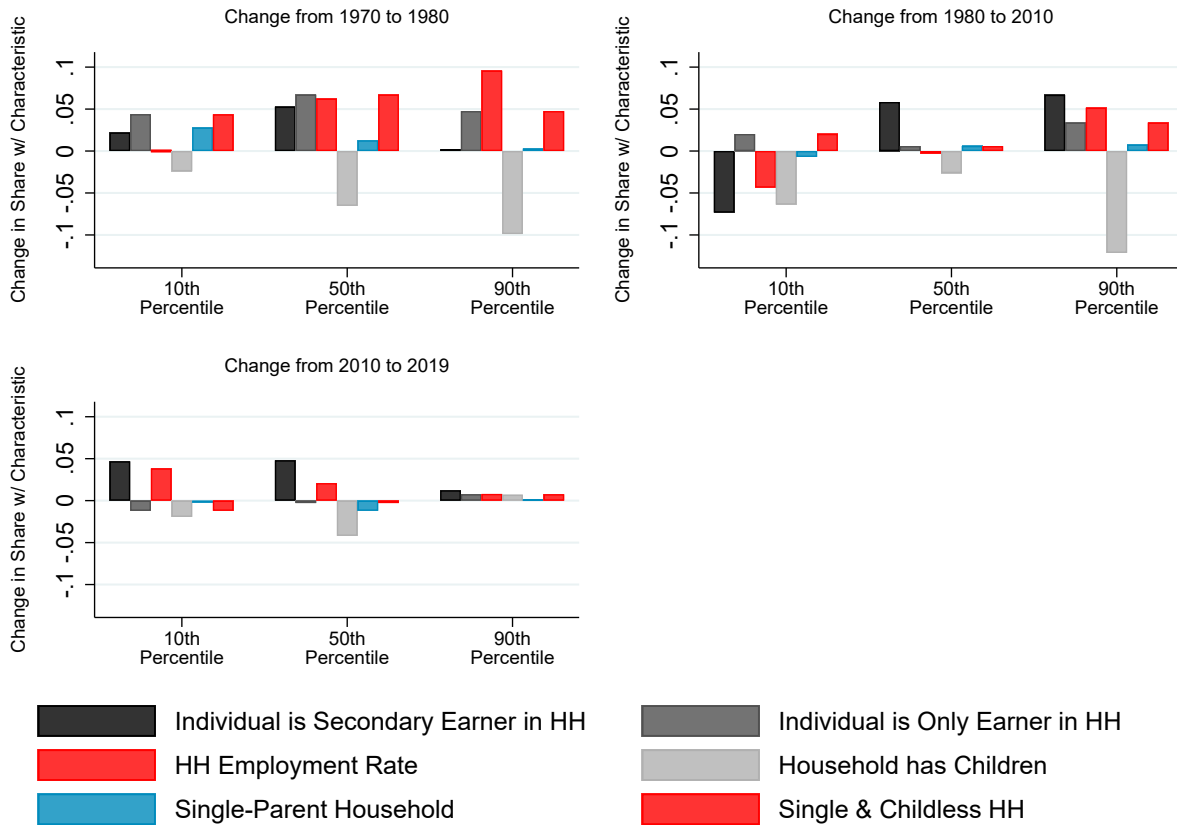
Figure C2: Change in benefit participation and benefit levels (conditional on receipt) by program time and percentile of household earnings distribution



Note: The left panel plots the change in the share of individuals receiving the specified benefit (extensive margin). The right panel plots changes in the mean benefit level among individuals receiving the benefit (intensive margin). All benefit levels are adjusted for inflation using the PCE. The takeaway from the figure is that the declining level of total income transfers received at the 10th percentile of the earnings distribution (relative to the 50th and 90th percentiles) from 2010 to 2019 is primarily due to declining benefit receipt (as opposed to benefit levels among recipients).

D Appendix: Changes in Household Characteristics of Workers Across the Personal Earnings Distribution

Figure D1: Change in share of workers with given characteristics by percentile of personal earnings distribution



Note: The figures document the percentage-point change in the share of individual workers at the specified percentile with the specified household-level characteristics. From 2010 to 2019, for example, more workers at the 10th percentile of the earnings distribution are secondary earners in their households.

Figure D2: Shares of workers with given characteristics by percentile of personal earnings distribution

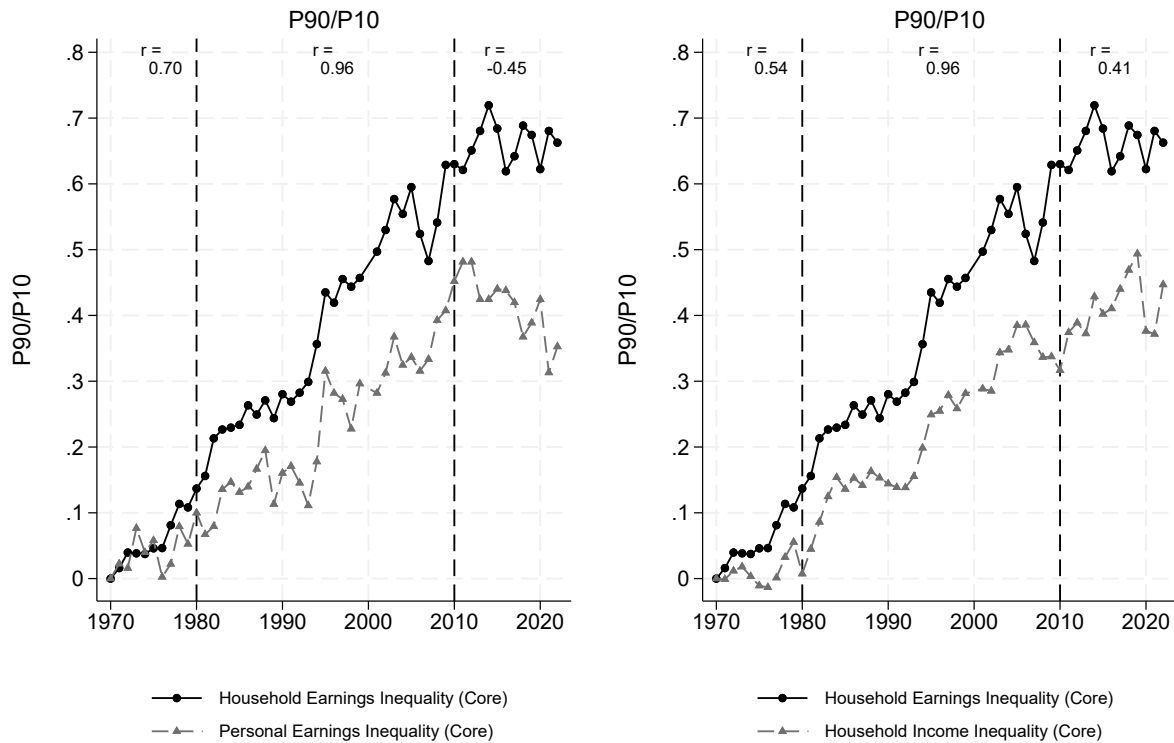


Note: The figures document the share of individual workers at the specified percentile with the specified household-level characteristics.

E Appendix: Extended Results through 2022

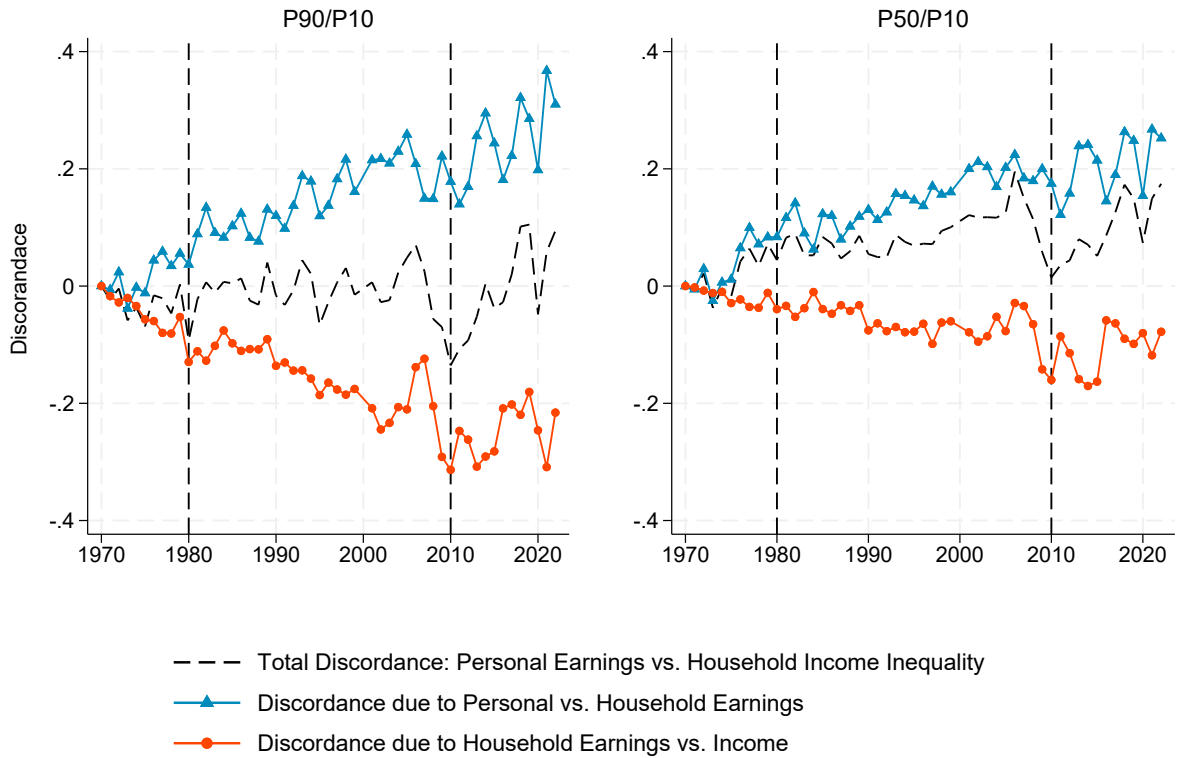
Our primary results present trends through 2019, just before the onset of the COVID-19 pandemic. In 2020 and 2021, extraordinary government intervention reduced household income inequality, while tight labor markets contributed to declining personal earnings inequality (though *household* earnings inequality largely remained stable. In 2022, however, nearly all of the COVID-era income supports had expired, and household income inequality returned to approximately pre-crisis levels. The figures below document that our conclusions are largely unchanged if we extend our analysis to 2022.

Figure E1: Inequality trends by income definition from 1970 through 2022



Note: Authors' analysis from the U.S. Current Population Survey. The sample includes core workers, defined as employed individuals between the ages of 16 and 64, who worked at least 20 hours per week on average, who worked at least 40 weeks per year, and who reported wages of at least \$4 per hour in 2018 USD. The vertical lines separate our three periods of interest: 1970–1980, 1980–2010, and 2010–2022.

Figure E2: Trends in discordance in inequality measures through 2022



Note: Authors’ analysis from the U.S. Current Population Survey following Equations 3 and 4. When “total discordance” is increasing, household income inequality is increasing at a greater rate than personal earnings inequality. The sample includes core workers, defined as employed individuals between the ages of 16 and 64, who worked at least 20 hours per week on average, who worked at least 40 weeks per year, and who reported wages of at least \$4 per hour in 2018 USD. The vertical lines separate our three periods of interest: 1970–1980, 1980–2010, and 2010–2022.

F Appendix: Characteristics of Secondary Earners

Table F1: Characteristics of secondary earners in the bottom quartile of the personal earnings distribution: occupation and household income; evidence from the CPS ASEC

	Year			
	1970	1980	2010	2019
HH Income Distribution population 18-64 years:				
Bottom Quartile	46.7%	43.6%	53.5%	50.7%
Second Quartile	21.8%	22.7%	24.1%	25.2%
Third Quartile	17.6%	17.7%	13.3%	14.0%
Top Quartile	13.9%	16.0%	9.1%	10.1%
HH Income Distribution total population:				
Bottom Quartile	30.4%	32.3%	36.0%	33.9%
Second Quartile	25.8%	25.4%	25.3%	25.3%
Third Quartile	23.5%	22.9%	20.4%	21.3%
Top Quartile	20.4%	19.4%	18.4%	19.6%

Note: We identify secondary earners (working adults who are not the primary earners in their household) with annual earnings in the bottom quartile of the personal earnings distribution. The values presented represent means for the sample of secondary earners by year. The sample is restricted to individuals aged 18 to 64 who are in employment unless otherwise stated.

Table F2: Characteristics of secondary earners in the bottom quartile of the personal earnings distribution: demographic and household characteristics; evidence from the CPS ASEC

	Year			
	1970	1980	2010	2019
Gender: Female	61.7%	65.7%	57.7%	54.9%
Race: Black	16.2%	12.6%	13.9%	16.2%
Age:				
18-25	25.1%	33.0%	24.4%	23.7%
26-55	59.5%	56.1%	63.6%	62.1%
55+	15.3%	10.9%	12.0%	14.2%
Married	76.3%	69.8%	56.0%	54.9%
Children	51.1%	49.2%	45.0%	40.0%
Education: with college degree	6.2%	11.2%	13.8%	19.1%
Intrahousehold relationship				
Head	40.3%	36.2%	44.0%	41.3%
Spouse	38.1%	37.2%	26.4%	24.6%
Child	15.3%	18.7%	16.0%	20.1%
Other relative	3.9%	3.0%	8.1%	9.1%
Other non-relative	2.5%	5.0%	5.6%	4.8%

Note: We identify secondary earners (working adults who are not the primary earners in their household) with annual earnings in the bottom quartile of the personal earnings distribution. The values presented represent means for the sample of secondary earners by year. The sample is restricted to individuals aged 18 to 64 who are in employment unless otherwise stated. Head is defined as the top earner. Spouse includes same sex and opposite sex spouses, married and non-married. Child includes foster child. Other relative includes parent, sibling, grandchild, and other relatives. Other non-relative includes housemates, lodgers, and other non-relatives.

Table F3: Characteristics of secondary earners in the bottom quartile of the personal earnings distribution in 2019: evidence from the Panel Study of Income Dynamics (including all ages)

	Year						
	2005	2007	2009	2011	2013	2015	2017
Under Age 18	50.1%	45.0%	41.5%	33.6%	25.7%	16.4%	9.9%
Out of Labor Force	12.1%	12.9%	12.5%	15.3%	18.1%	18.1%	16.2%
Unemployed	3.0%	4.3%	4.1%	6.8%	5.4%	7.4%	5.9%
Earnings Distribution:							
Bottom Quartile	15.2%	18.8%	21.5%	24.2%	29.4%	35.8%	51.1%
Second Quartile	7.1%	7.6%	9.9%	10.5%	7.6%	9.5%	8.0%
Third Quartile	6.1%	4.6%	2.9%	2.2%	3.5%	3.7%	1.9%
Top Quartile	1.7%	2.0%	2.6%	2.4%	2.1%	1.2%	0.2%

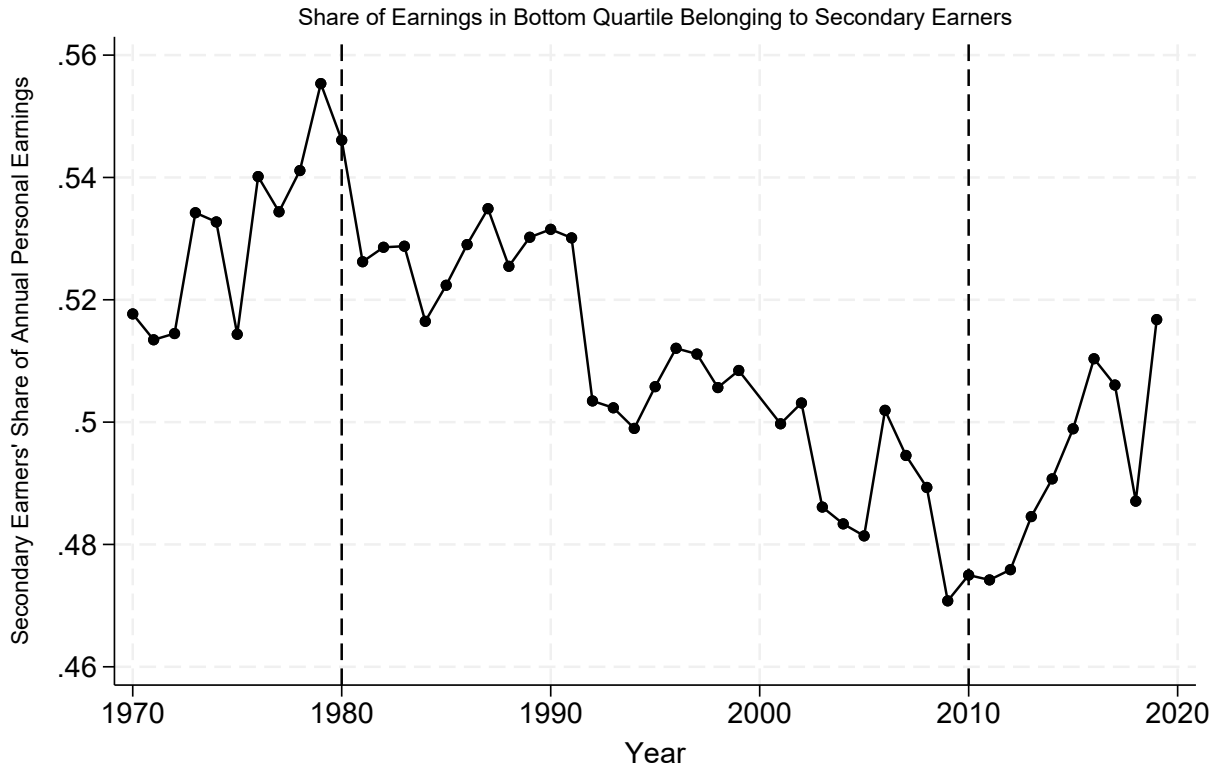
Note: Data from the Panel Study of Income Dynamics. We identify secondary earners (working adults who are not the primary earners in their household) in 2019 with annual earnings in the bottom quartile of the personal earnings distribution. Using the panel component of the data, we then evaluate the characteristics of these workers from 2005 to 2017. The values presented represent means for the sample of secondary earners in 2019 by year.

Table F4: Characteristics of secondary earners in the bottom quartile of the personal earnings distribution in 2019: evidence from the Panel Study of Income Dynamics (restricted to observations at ages 18 or older)

	Year						
	2005	2007	2009	2011	2013	2015	2017
Under Age 18	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Out of Labor Force	24.2%	23.5%	21.3%	23.1%	24.4%	21.7%	18.0%
Unemployed	6.1%	7.9%	7.1%	10.2%	7.2%	8.9%	6.6%
Earnings Distribution:							
Bottom Quartile	30.1%	33.7%	36.8%	36.4%	39.2%	42.9%	56.4%
Second Quartile	14.2%	13.7%	17.0%	15.8%	10.3%	11.4%	8.9%
Third Quartile	12.3%	8.3%	4.9%	3.3%	4.7%	4.4%	2.1%
Top Quartile	3.4%	3.6%	4.5%	3.6%	2.8%	1.4%	0.2%

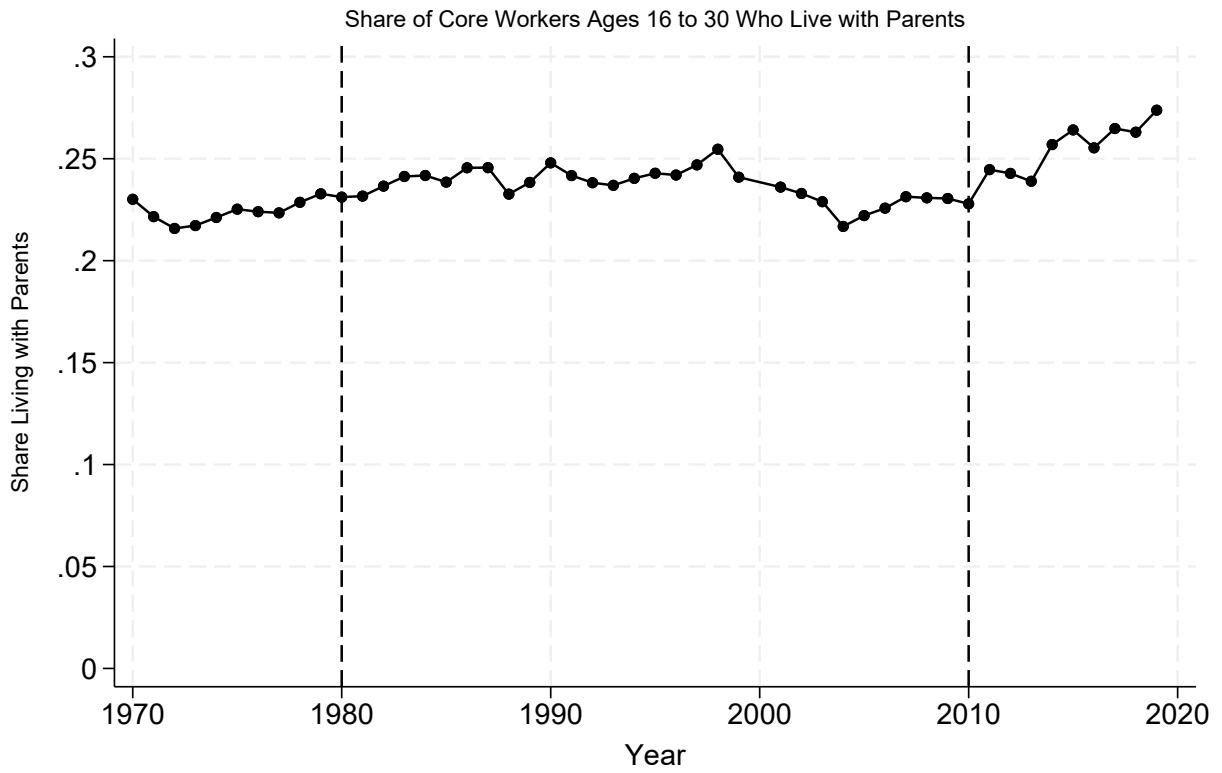
Note: Data from the Panel Study of Income Dynamics. We identify secondary earners (working adults who are not the primary earners in their household) in 2019 with annual earnings in the bottom quartile of the personal earnings distribution. Using the panel component of the data, we then evaluate the characteristics of these workers from 2005 to 2017. The values presented represent means for the sample of secondary earners in 2019 by year.

Figure F1: Share of earnings in bottom quartile of personal earnings distribution belonging to secondary earners



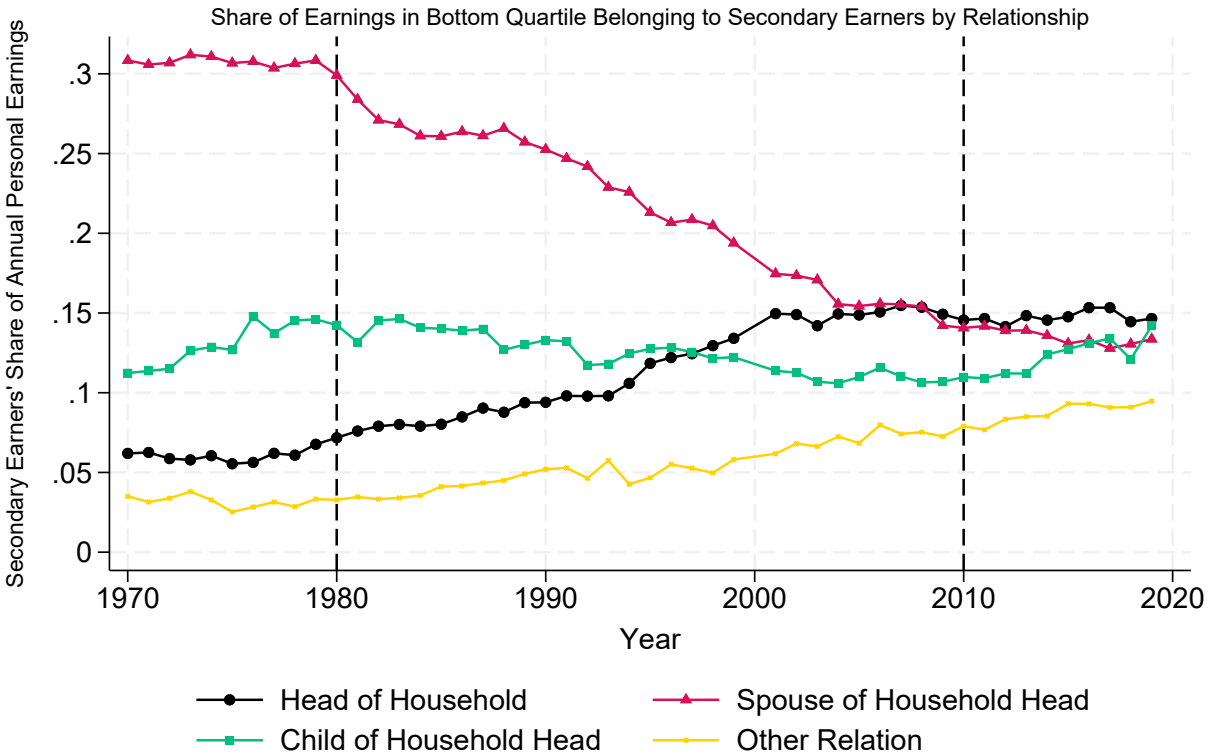
Note: The Y-axis does not begin at zero. Authors' analysis from the CPS ASEC. The figure plots the share of total earnings among core workers in the bottom quartile of the annual personal earnings distribution that belongs to secondary earners. The share of earnings belonging to this group generally declines from 1980 to 2010, but increases from 2010 to 2019.

Figure F2: Share of core workers between the ages of 16 to 30 who live in a household with their parent(s)



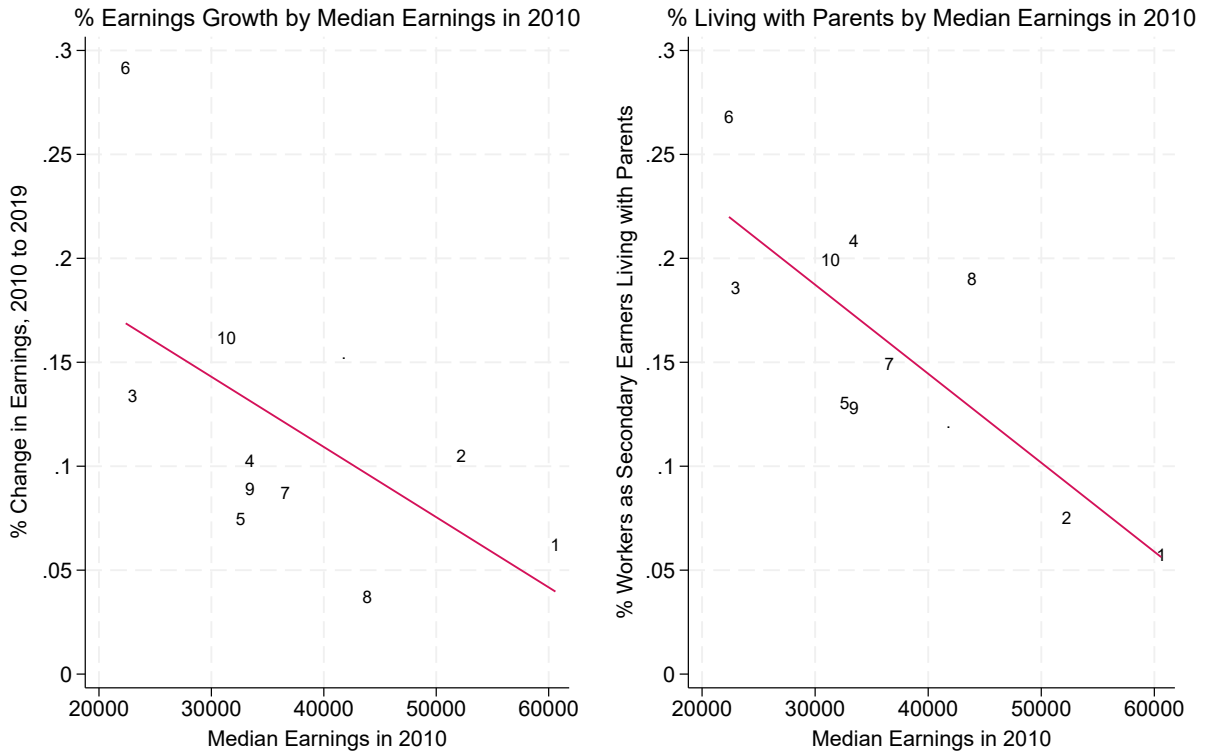
Note: Authors' analysis from the CPS ASEC.

Figure F3: Share of earnings in bottom quartile of personal earnings distribution belonging to secondary earners by relationship to household head



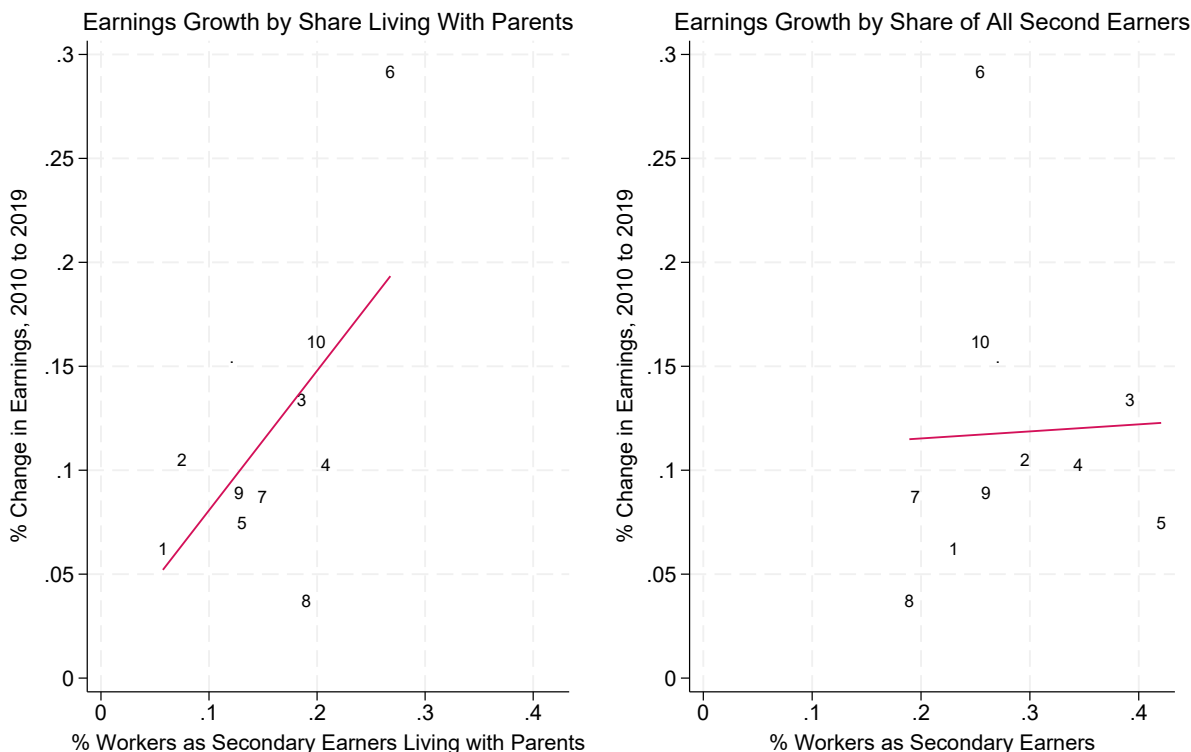
Note: Authors' analysis from the CPS ASEC. The figure plots the share of total earnings among core workers in the bottom quartile of the annual personal earnings distribution that belongs to secondary earners with the specified relation to the household head.

Figure F4: Earnings growth and share of workers in occupation living with parents by 2010 median occupational earnings



Note: Authors' analysis from the CPS ASEC. The numbered occupation groups include (1) Management, business, and financial occupations; (2) Professional and related occupations; (3) Service occupations; (4) Sales and related occupations; (5) Office and administrative support occupations; (6) Farming, fishing, and forestry occupations; (7) Construction and extraction occupations; (8) Installation, maintenance, and repair occupations; (9) Production occupations; (10) Transportation and material moving occupations. Earnings are deflated to 2012 USD using the PCE. The sample includes core workers, defined as employed individuals between the ages of 16 and 64, who worked at least 20 hours per week on average, who worked at least 40 weeks per year, and who reported wages of at least \$4 per hour in 2018 USD.

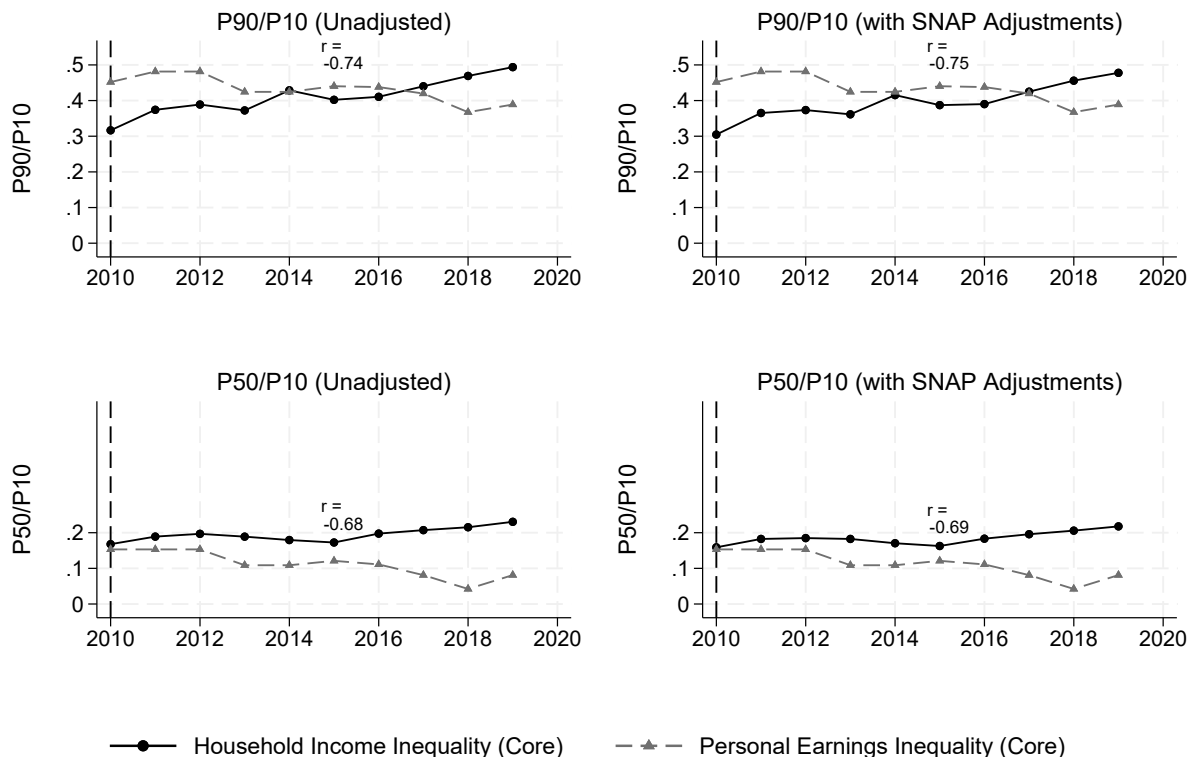
Figure F5: Occupational earnings growth and the share of workers in each occupation who are secondary earners (left) and secondary earners living with parents (right)



Note: Authors' analysis from the CPS ASEC. The numbered occupation groups include (1) Management, business, and financial occupations; (2) Professional and related occupations; (3) Service occupations; (4) Sales and related occupations; (5) Office and administrative support occupations; (6) Farming, fishing, and forestry occupations; (7) Construction and extraction occupations; (8) Installation, maintenance, and repair occupations; (9) Production occupations; (10) Transportation and material moving occupations. Earnings are deflated to 2012 USD using the PCE. The sample includes core workers, defined as employed individuals between the ages of 16 and 64, who worked at least 20 hours per week on average, who worked at least 40 weeks per year, and who reported wages of at least \$4 per hour in 2018 USD.

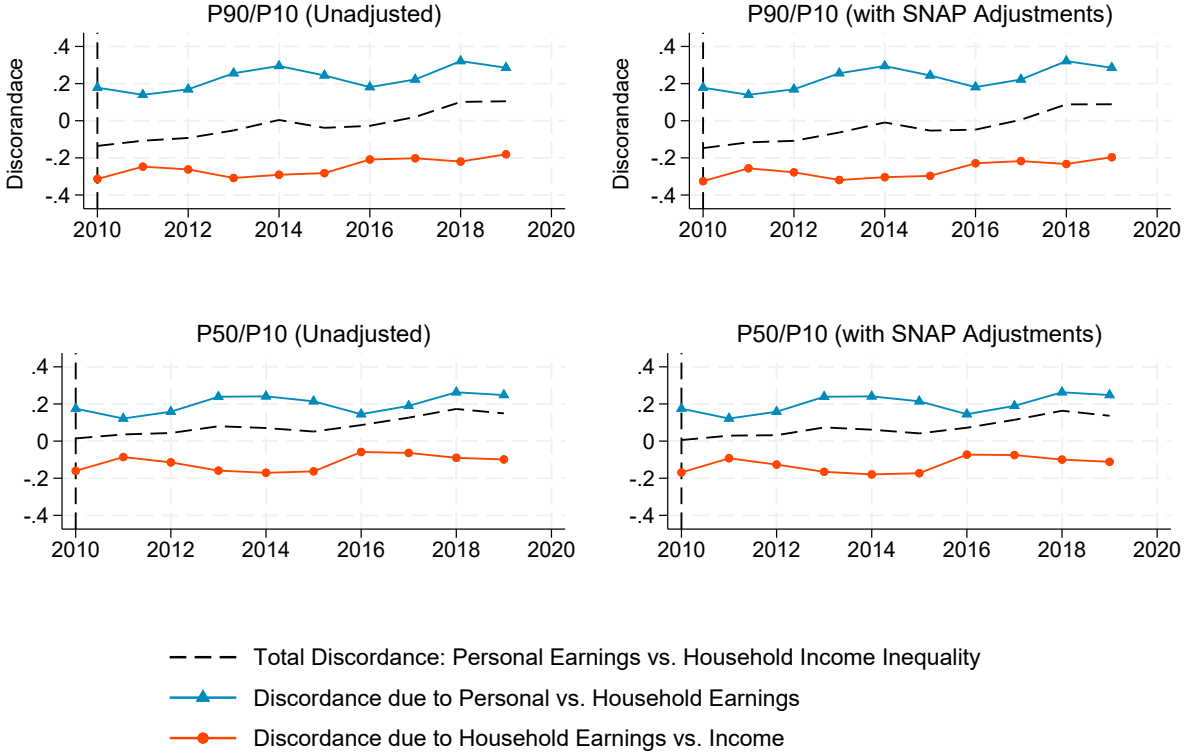
G Appendix: Results with Adjustments for Benefit Underreporting

Figure G1: Trends in inequality from 2010 to 2019 after adjusting for SNAP benefit misreporting



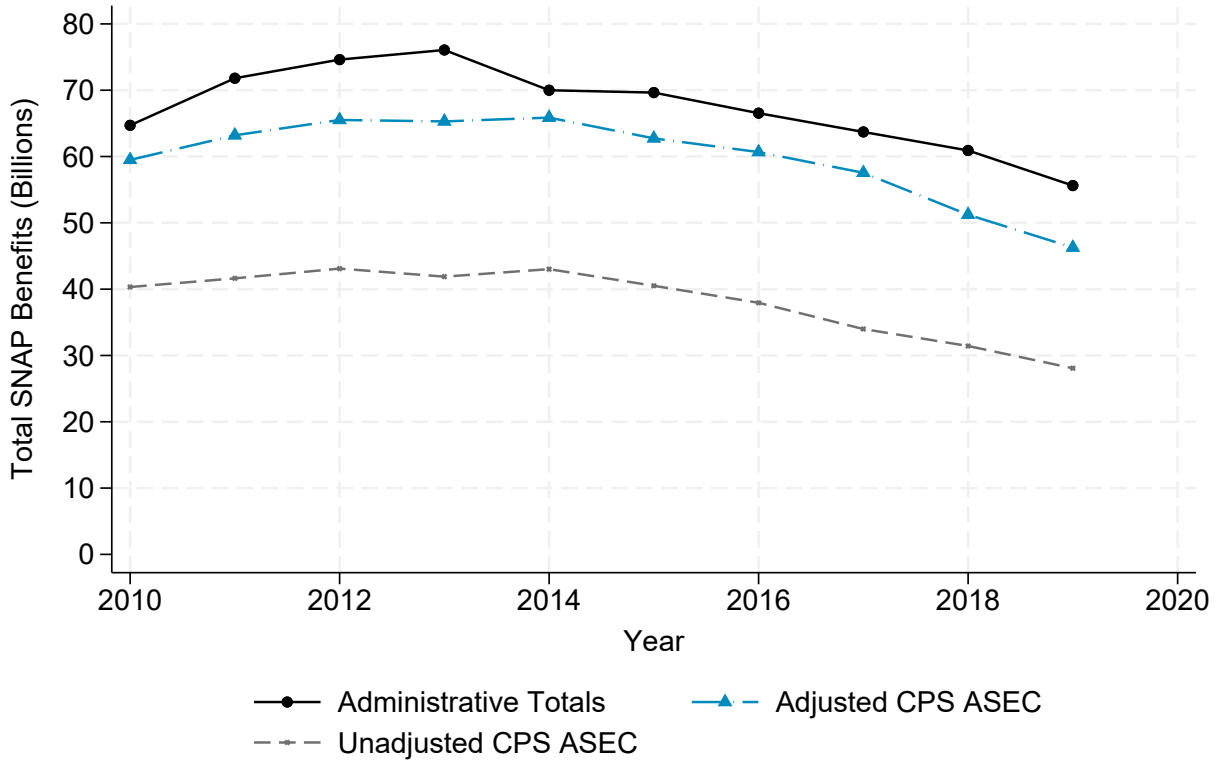
Note: Authors' analysis from the CPS ASEC. We adjust for SNAP benefit underreporting in the CPS ASEC by matching state-year SNAP caseloads as reported by the U.S. Department of Agriculture. We use data from SNAP Quality Control reports to identify the composition of SNAP recipients when imputing new SNAP receipts to match state-year totals from USDA. We do not remove SNAP receipts from CPS ASEC respondents who report receiving SNAP. We follow Mittag (2019) in imputing benefit levels among new SNAP recipients in the ASEC.

Figure G2: Trends in discordance in inequality measures from 2010 to 2019 after adjusting for SNAP benefit misreporting



Note: Authors' analysis from the CPS ASEC. We adjust for SNAP benefit underreporting in the CPS ASEC by matching state-year SNAP caseloads as reported by the U.S. Department of Agriculture. We use data from SNAP Quality Control reports to identify the composition of SNAP recipients when imputing new SNAP receipt to match state-year totals from USDA. We do not remove SNAP receipt from CPS ASEC respondents who report receiving SNAP. We follow Mittag (2019) in imputing benefit levels among new SNAP recipients in the ASEC.

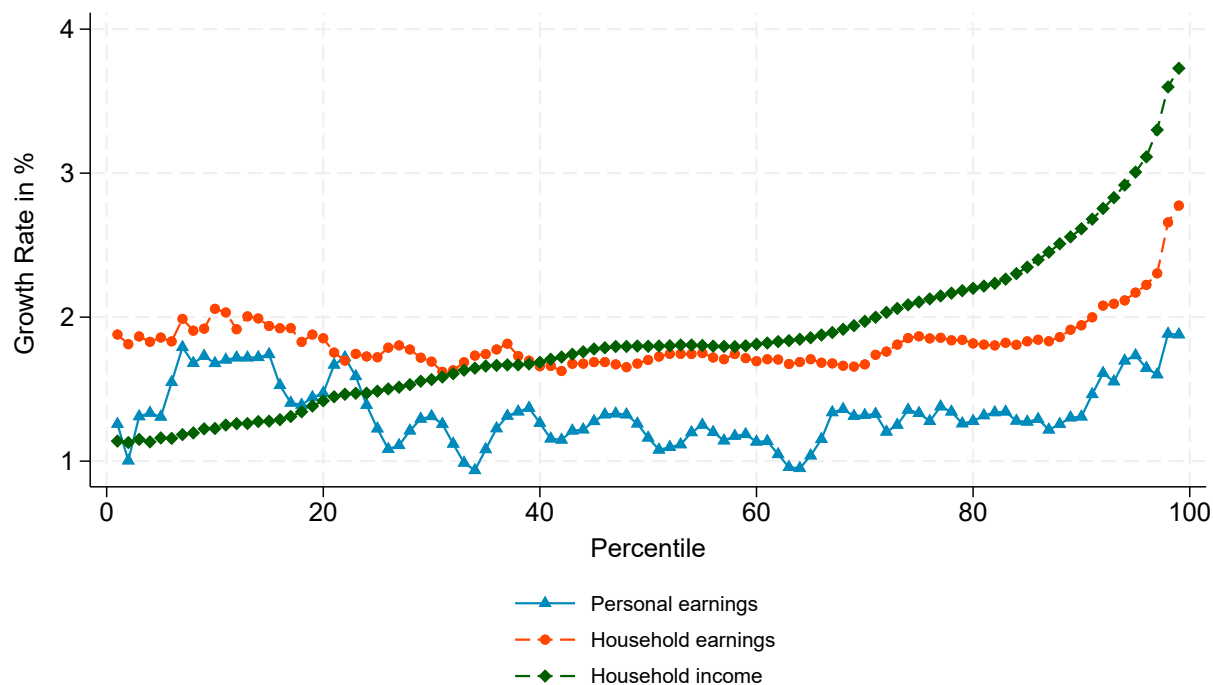
Figure G3: Total SNAP benefits in administrative data and CPS ASEC before and after adjustments for misreporting



Note: Authors' analysis from the CPS ASEC. We adjust for SNAP benefit underreporting in the CPS ASEC by matching state-year SNAP caseloads as reported by the U.S. Department of Agriculture. We use data from SNAP Quality Control reports to identify the composition of SNAP recipients when imputing new SNAP receipts to match state-year totals from USDA. We do not remove SNAP receipts from CPS ASEC respondents who report receiving SNAP. We follow Mittag (2019) in imputing benefit levels among new SNAP recipients in the ASEC.

H Appendix: Additional Information on Income Growth and Household Income Composition

Figure H1: Growth incidence curves across the earnings and income distributions, 2010-2019



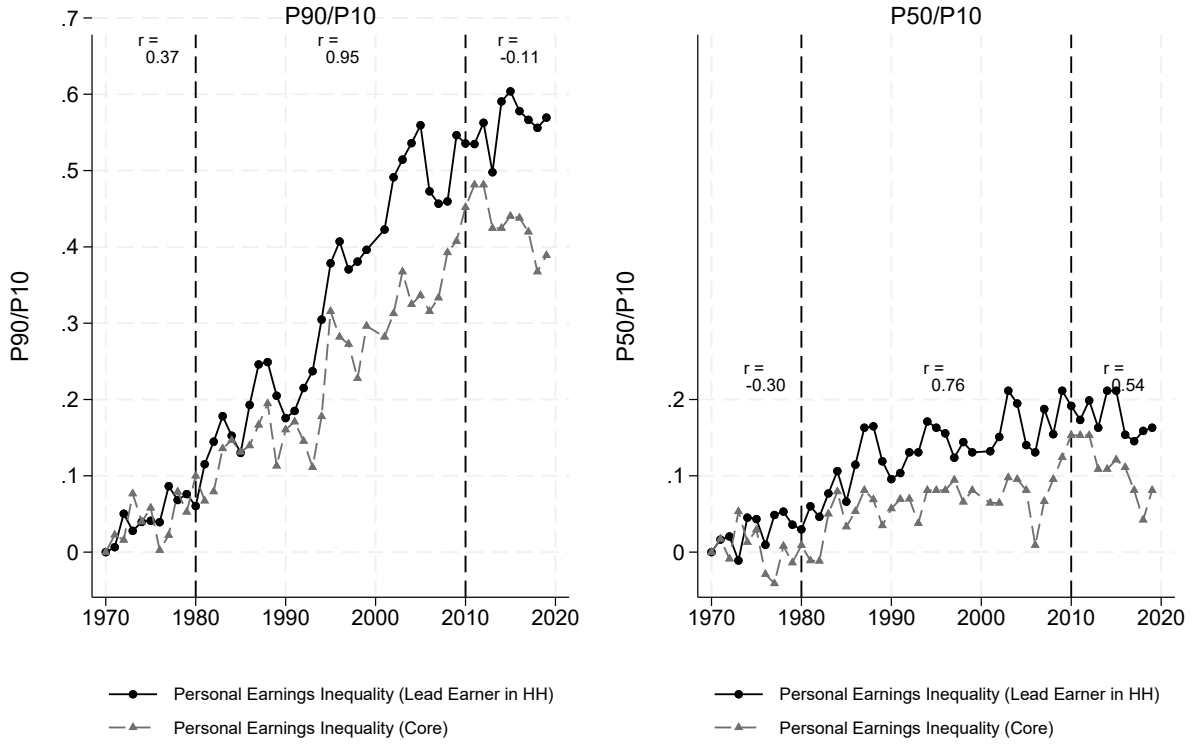
Note: The figure plots the change in earnings and income for each percentile. Growth rates are shown as the annual average growth rate in a 3-percentile moving average. Earnings and incomes are adjusted for inflation using the PCE.

Figure H2: Share of household income by source across the personal earnings distribution



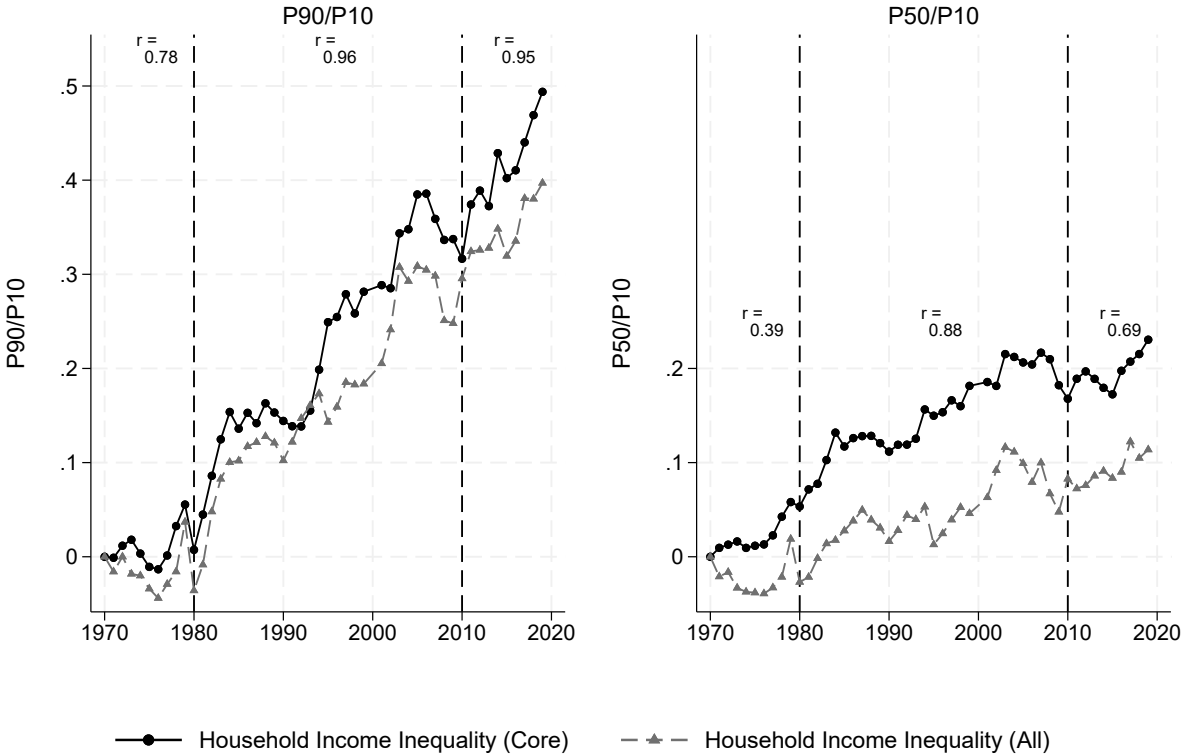
Note: The figure plots the share of total household income composed of the specified income component among workers at the specified rank of the personal earnings distribution. Shares are presented as means across a 3-percentile moving average. Others' earnings include the market earnings of other household members. Non-labor income includes all household taxes, transfers, and private income.

Figure H3: Trends in personal earnings inequality when including versus excluding secondary earners



Note: Authors’ analysis using data from the CPS ASEC. “Lead Earner in HH” refers to trends when secondary earners in households are excluded. “Core” instead refers to our primary sample, in which secondary earners are included.

Figure H4: Trends in household income inequality for ‘core’ workers versus the full population



Note: Authors’ analysis from the U.S. Current Population Survey. The core sample includes the household incomes of workers who are employed, between the ages of 16 and 64, who work at least 20 hours per week on average, who work at least 40 weeks per year, and who report wages of at least \$4 per hour in 2018. The vertical lines separate our three periods of interest: 1970–1980, 1980–2010, and 2010–2019.