Global Income Dynamics Database Project

Tables and Figures: Core Section

Serdar Ozkan[*]   Sergio Salgado[†]

December 7, 2020

Introduction

This document describes the set of figures and tables for the core section of the GID project. In the case you encounter, any problem in the code, or have any suggestion to make it better, please send us an email.

The main plotting code is 7_Paper_Figs.do that utilizes 0_Initialize.do and myplots.do. The code 7_Paper_Figs.do uses the information generated by the rest of the codes. In order to run the code and save your figures you will need to specify

- The location of the inequality, volatility, and mobility data in lines 12 to 15.

- The years available in your data set in lines 26 and 27.

- The folder where the figures will be saved in line 42.

- Which section do you want to plot in lines 47 to 54. By default, all sections are active.

In what follows, we show the results for Norway and provide some additional comments for the figures that need to be included in the main body of the paper. We also show a series of Figure that need to be included in the paper's appendix. The code 7_Paper_Figs.do is heavily commented but if you have any questions or suggestions, please send us an email.

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[*]University of Toronto; serdar.ozkan@utoronto.ca
[†]The Wharton School, University of Pennsylvania; ssalgado@upenn.edu

Table 1: Summary Statistics

Notes: The following table uses data from the **Descriptive_Stat** folder. The top panel uses CS_cross_tabulation.csv and the bottom uses L_CS_labor_yr_sum_stats.csv.

TABLE I – DESCRIPTIVE STATISTICS FOR DIFFERENT SAMPLES

Year	Obs. (Mill)	Mean Income		Women % Share	Age Shares %			Education Shares %			
		Men	Women		$[25, 35]$	$[36, 45]$	$[46, 55]$	$< HS$	HS	CD	$> CD$
1995	2.00	44,467	27,805	47.7	42.1	31.8	26.1	41.9	27.4	22.5	8.3
2015	1.96	65,509	46,094	48.1	36.4	32.3	31.3	23.8	32.7	29.6	13.9

Year	P1	P5	P10	P25	P50	P75	P90	P95	P99	P99.9
1995	369	2,829	8,062	25,061	43,871	57,716	74,860	90,833	134,531	540,776
2015	888	5,691	13,269	35,014	56,122	75,409	102,645	126,169	196,130	1,278,346

Table I shows summary statistics for CS sample.

Figure 1: Inequality

Notes: Figures 1 and 2 are created by 7_Paper_Figs.do between lines 60 and 280 in section figineq. The plots can accommodate different x-axis and y-axis. To the years available in your sample, you might need to change lines 112 to 120. To ensure the y-axes are the same for men and women, you need to adjust the y-axis plot by plot. For the figures using log earnings, this can be done, for instance, between lines 158 and 161. We tried to follow the same structure across different plots.

FIGURE 1 – CHANGE OF PERCENTILES OF THE LOG REAL EARNINGS DISTRIBUTION

(A) Men
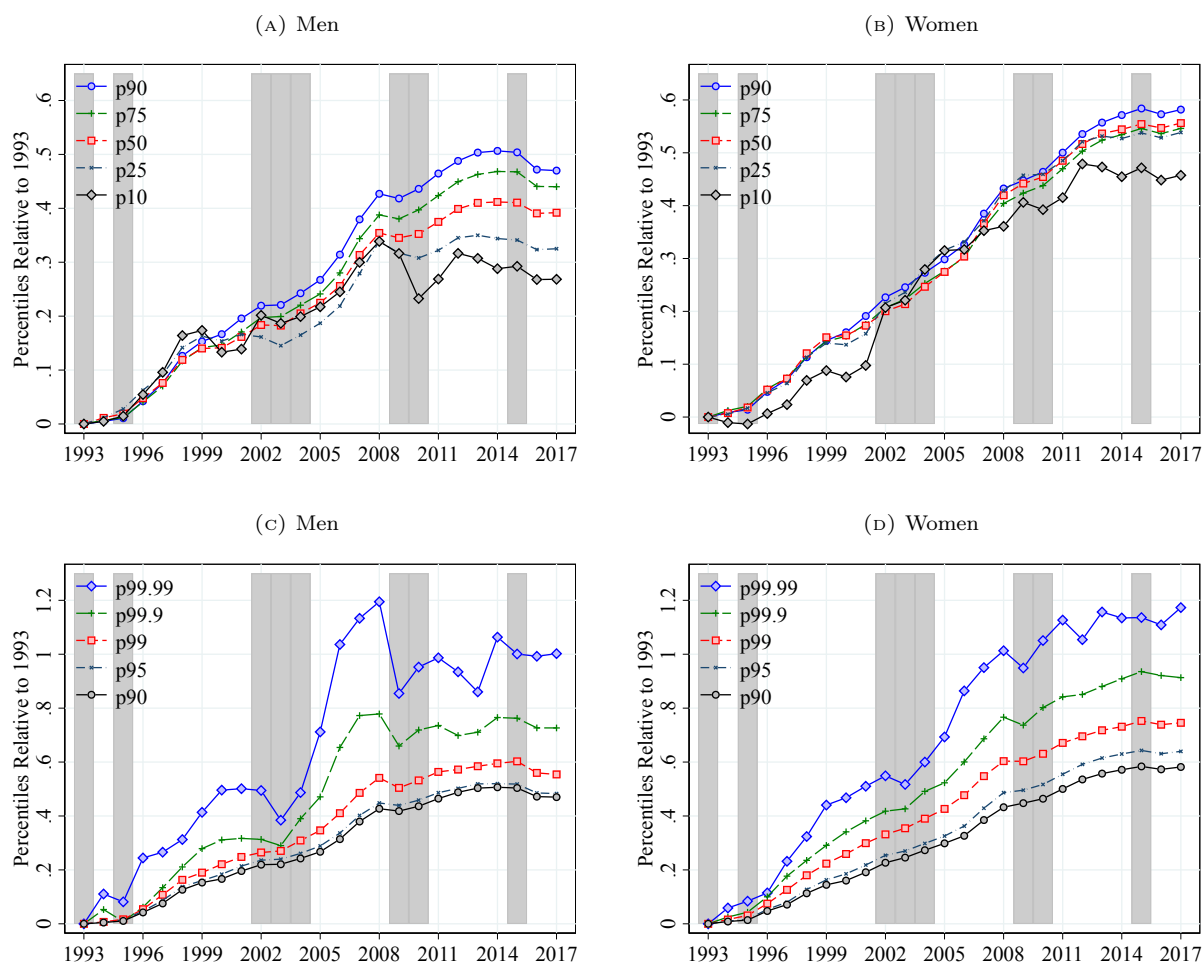
(B) Women

(C) Men

(D) Women

Using raw log earnings and the CS+TMax sample, Figure 1 plot against time the following variables: (a) Men: P10, P25, P50, P75, P90 (b) Women: P10, P25, P50, P75, P90, (c) Men: P90, P95, P99, P99.9, P99.99, (c) Women: P90, P95, P99, P99.9, P99.99. All percentiles are normalized to 0 in the first available year. Shaded areas are recessions.

Figure 2: Inequality

(A) Men
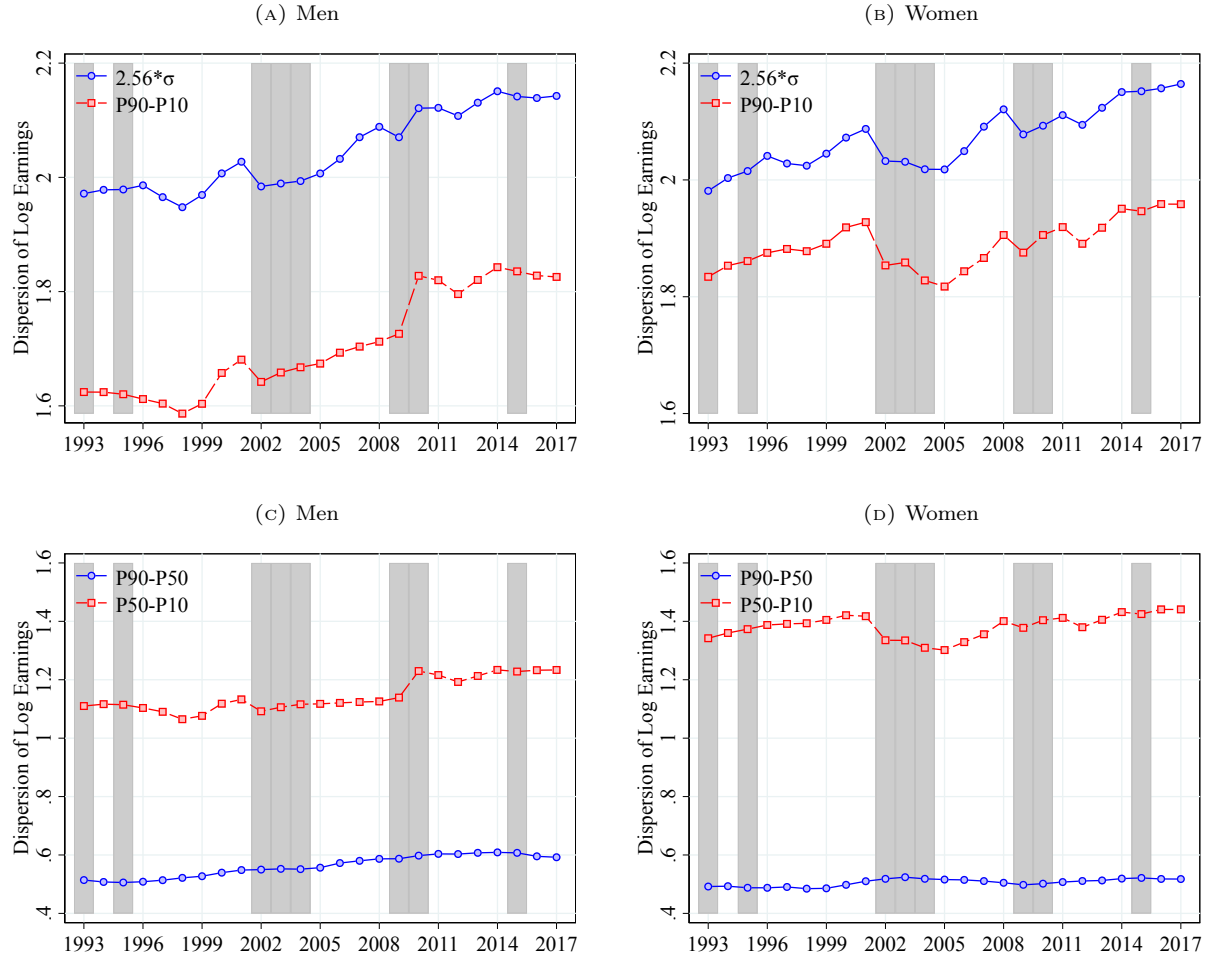
(B) Women

(C) Men

(D) Women

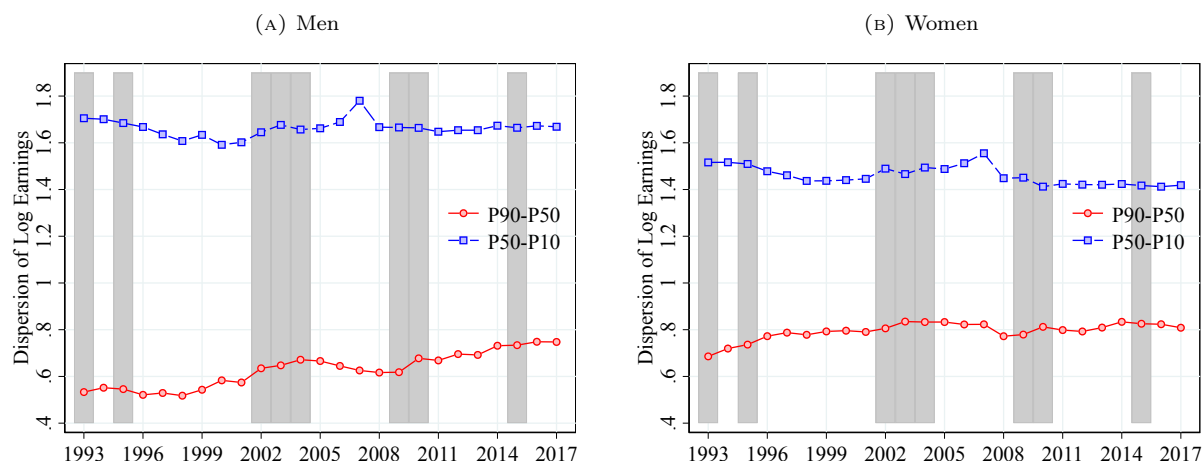Using raw log earnings and the CS+TMax sample, Figure 2 plot against time the following variables: (a) Men: P90-10 and 2.56*SD of log income (b) Women: P90-10 and 2.56*SD of log income (c) Men: P90-50 and P50-10, (d) Women: P90-50 and P50-10. Shaded areas are recessions. 2.56*SD corresponds to P90-10 differential for a Gaussian distribution.

Figure 3: Initial Inequality

Notes: Figures 3 and 4 are created by 7_Paper_Figs.do between lines 286 and 466 in section figcoh. The plots can accommodate different x-axis and y-axis. Notice, line 334 chooses which age is being plotted. For the baseline results, you need to plot inequality at age 25 but you can add more ages if you prefer. Each "initial" age will be plotted on a different file.

Figure 4 requires you to choose which cohorts you want to plot (line 452) and which ages will be linked trough gray dashed lines (line 453). The code requires you to specify four cohorts and up to 6 ages. The default (which is recommended) plots 4 cohorts and three ages (age 25, 35, and 45). Notice also that the plot allows you to add arrows and text. The position needs to be set manually for men and women. This case be done between lines 390 and 435.

FIGURE 3 – INCOME INEQUALITY

(A) Men   (B) Women

Using raw log earnings and the CS+TMax sample, Figure 3 plot against time the following variables: (a) Men: P90-50 and P50-10 at age 25, (b) Women: P90-50 and P50-10 at age 25. Shaded areas are recessions.

FIGURE 4 – LIFE-CYCLE INEQUALITY OVER COHORTS
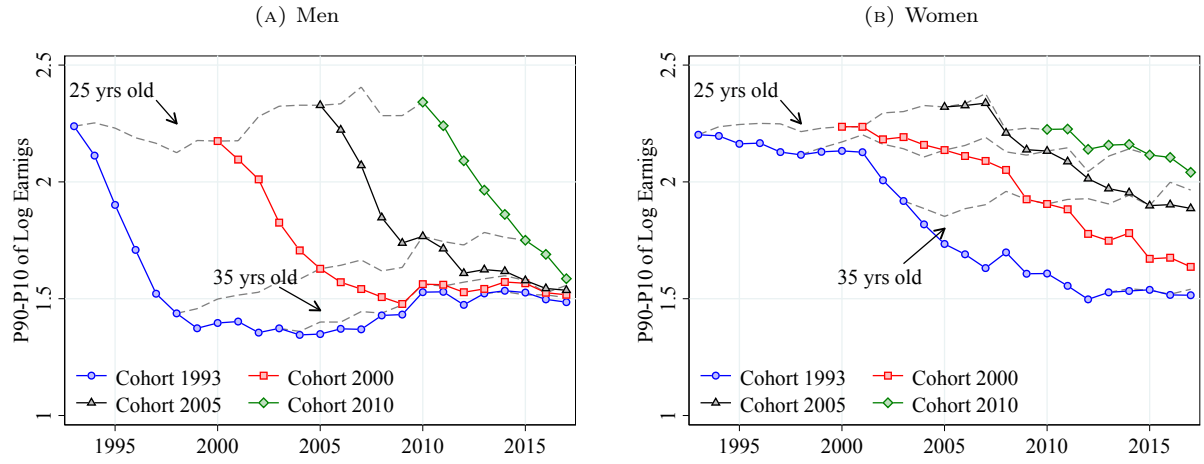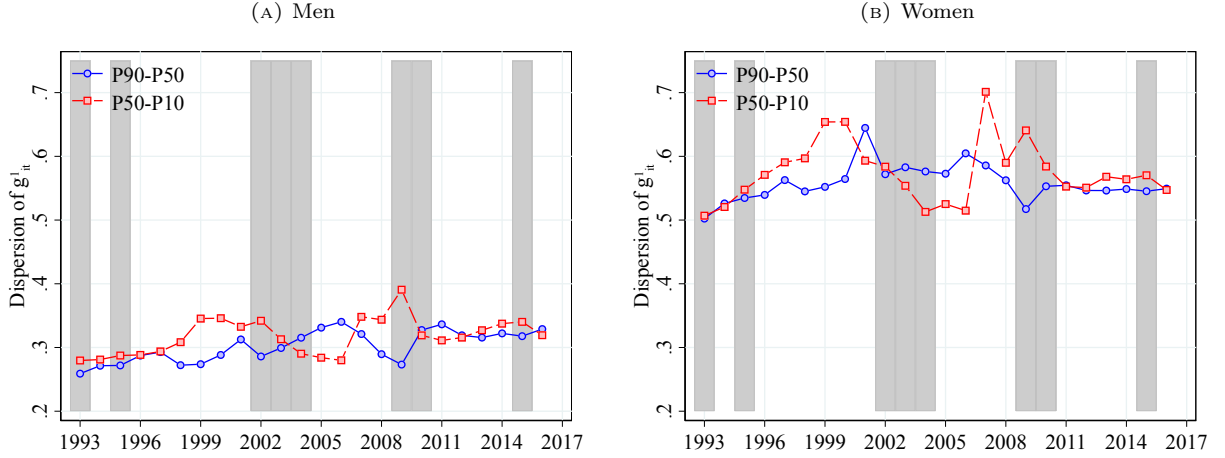
(A) Men

(B) Women

Using raw log earnings and the CS+TMax sample, Figure 3 plot against time the following variables: (a) Men: P90-10 over the life cycle for all cohorts available, (b) Women: P90-10 over the life cycle for all cohorts available.

Figure 4: Earnings Change Time Series

Notes: Figures 5 and 6 are created by 7_Paper_Figs.do between lines 471 and 603 in section figvol. The plots can accommodate different x-axis and y-axis. Notice, the figures for Kurtosis are plotting excess kurtosis (Crow-Sidiqqui relative to 2.91 and fourth standardized moment relative 3, which are the corresponding values for a Normal distribution).

FIGURE 5 – DISPERSION OF 1-YEAR LOG EARNINGS CHANGES

(A) Men (B) Women

Using residual one-year earnings changes and the LS+TMax sample, Figure 5 plot against time the following variables: (a) Men: P90-10 differential, (b) Women: P90-10 differential. Shaded areas are recessions.

Figure 5: Skewness and Kurtosis Time Series

FIGURE 6 – SKEWNESS AND KURTOSIS OF 1-YEAR LOG EARNINGS CHANGES

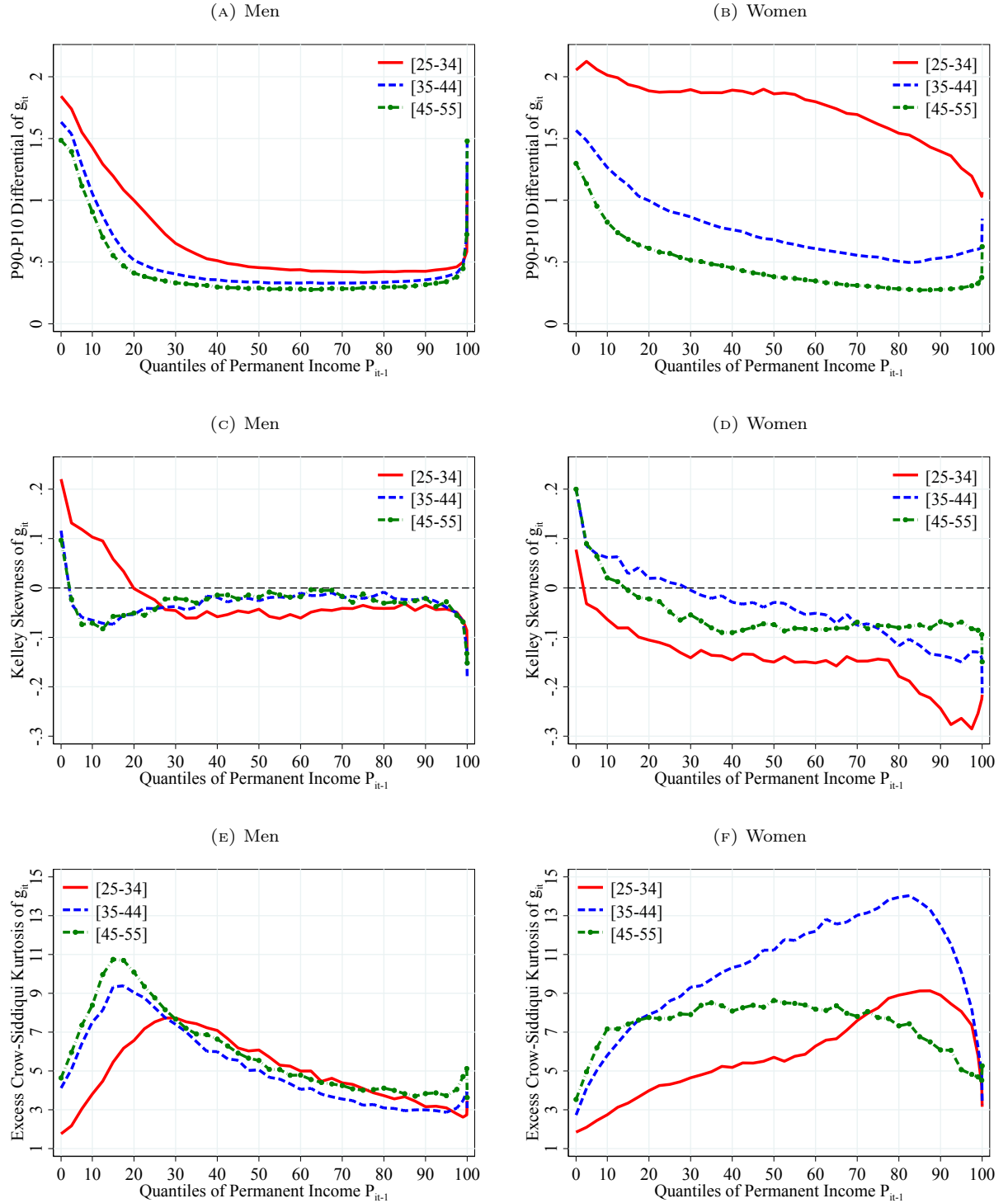(A) Kelley Skewness (B) Excess Crow-Siddiqui Kurtosis
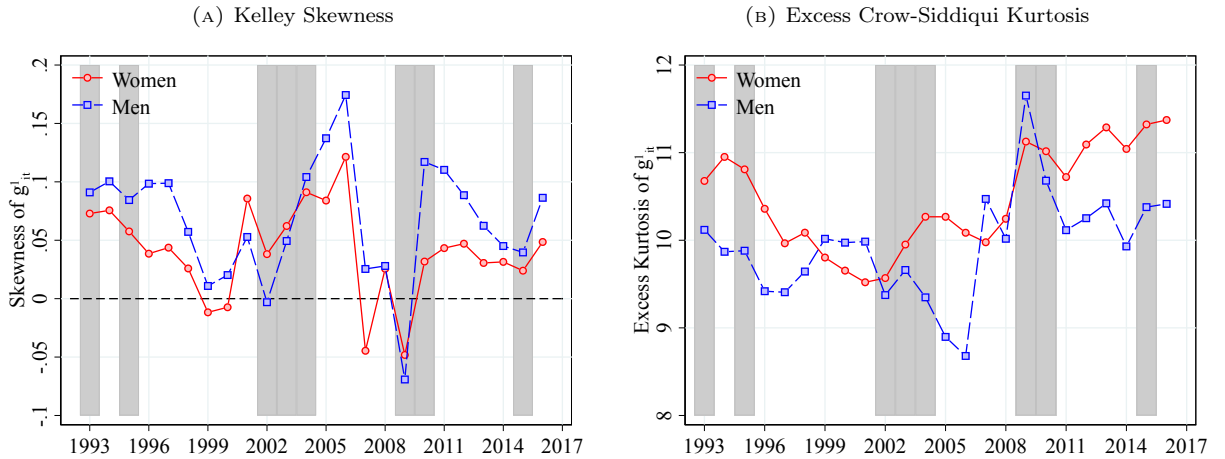
Using residual one-year earnings changes and the LS+TMax sample, Figure 6 plot against time the following variables: (a) Men and Women: Kelly skewness, (b) Men and Women: Excess Crow-Siddiqui kurtosis calculated as $\frac{P97.5-P2.5}{P75-P25} - 2.91$ where the first term is the Crow-Siddiqui measure of Kurtosis and 2.91 corresponds to the value of this measure for Normal distribution. Shaded areas are recessions.

Figure 6: Earnings Change Heterogeneity

Notes: Figure 7 are created by 7_Paper_Figs.do between lines 609 and 796 in section figquan. The plots can accommodate different x-axis and y-axis. Notice, the figures for Kurtosis are plotting excess kurtosis (Crow-Sidiqqui relative to 2.91 and fourth standardized moment relative 3, which are the corresponding values for a Normal distribution).

(A) Men

(B) Women

(C) Men

(D) Women

(E) Men

(F) Women

Using residual one-year earnings changes and the H+TMax sample, Figure 7 plot against permanent income quantile groups the following variables for the 3 age groups: (a) Men: P90-10, (b) Women: P90-10, (c) Men: Kelley Skewness, (d) Women: Kelley Skewness, (e) Men: Excess Crow-Siddiqui kurtosis, (f) Women: Excess Crow-Siddiqui kurtosis. Excess Crow-Siddiqui kurtosis calculated as $\frac{P97.5-P2.5}{P75-P25} - 2.91$ where the first term is the Crow-Siddiqui measure of Kurtosis and 2.91 corresponds to the value of this measure for Normal distribution.

Figure 7: Mobility

Notes: Figures 8 and 9 are created by 7_Paper_Figs.do between lines 800 and 956 in section figmob. The plots can accommodate different x-axis and y-axis. Both figures require imputing the position of the text and arrow to identify the mobility of individuals at the top 0.1%. This is done, for instance, between lines 818 and 825. Each plot requires different positions for the arrow and text.

Figure 9 requires selecting which years are going to be plotted which depends on the years available in your sample. By default, the plots are set for 1995 and 2005.

FIGURE 8 – EVOLUTION OF 10-YEAR MOBILITY OVER THE LIFE CYCLE

(A) Men

(B) Women
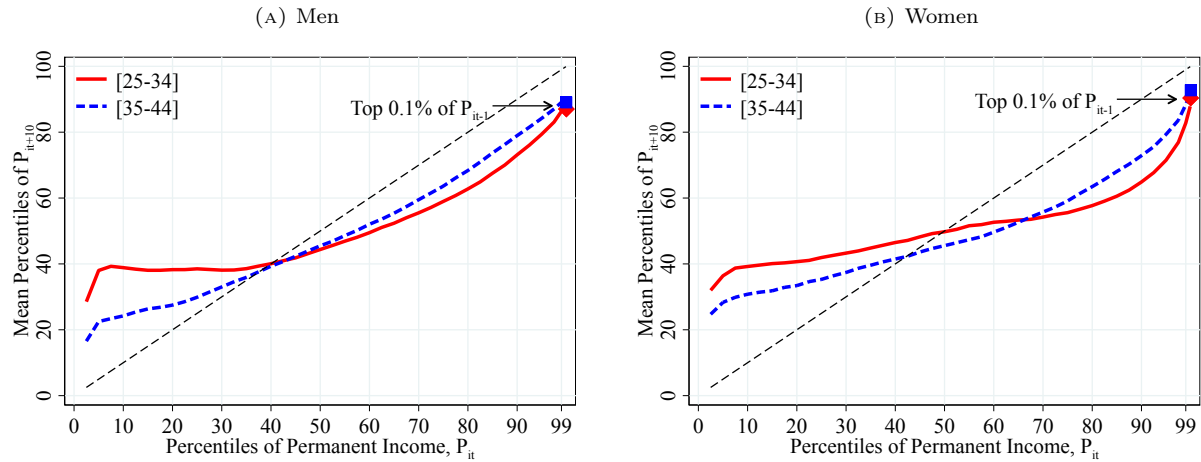
Figure 8 shows average rank-rank mobility.

FIGURE 9 – EVOLUTION OF 10-YEAR MOBILITY OVER TIME

(A) Men

(B) Women
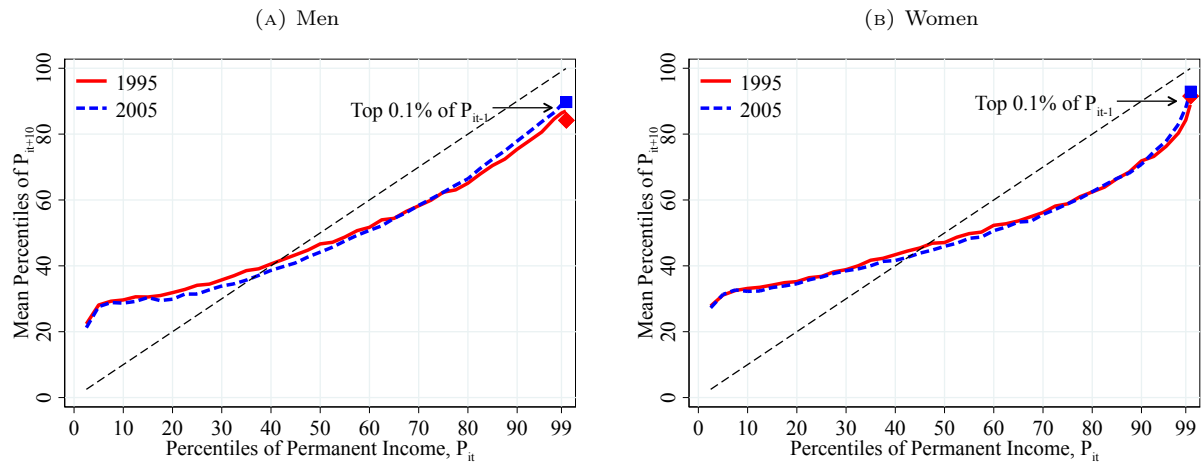
Figure 9 shows average rank-rank mobility.

Appendix Figures

Figure 8 Appendix 1-2: Earnings for the whole sample

FIGURE 10 – DISTRIBUTION OF EARNINGS IN THE POPULATION

(A) Percentiles

(B) Top Percentiles

(C) Dispersion
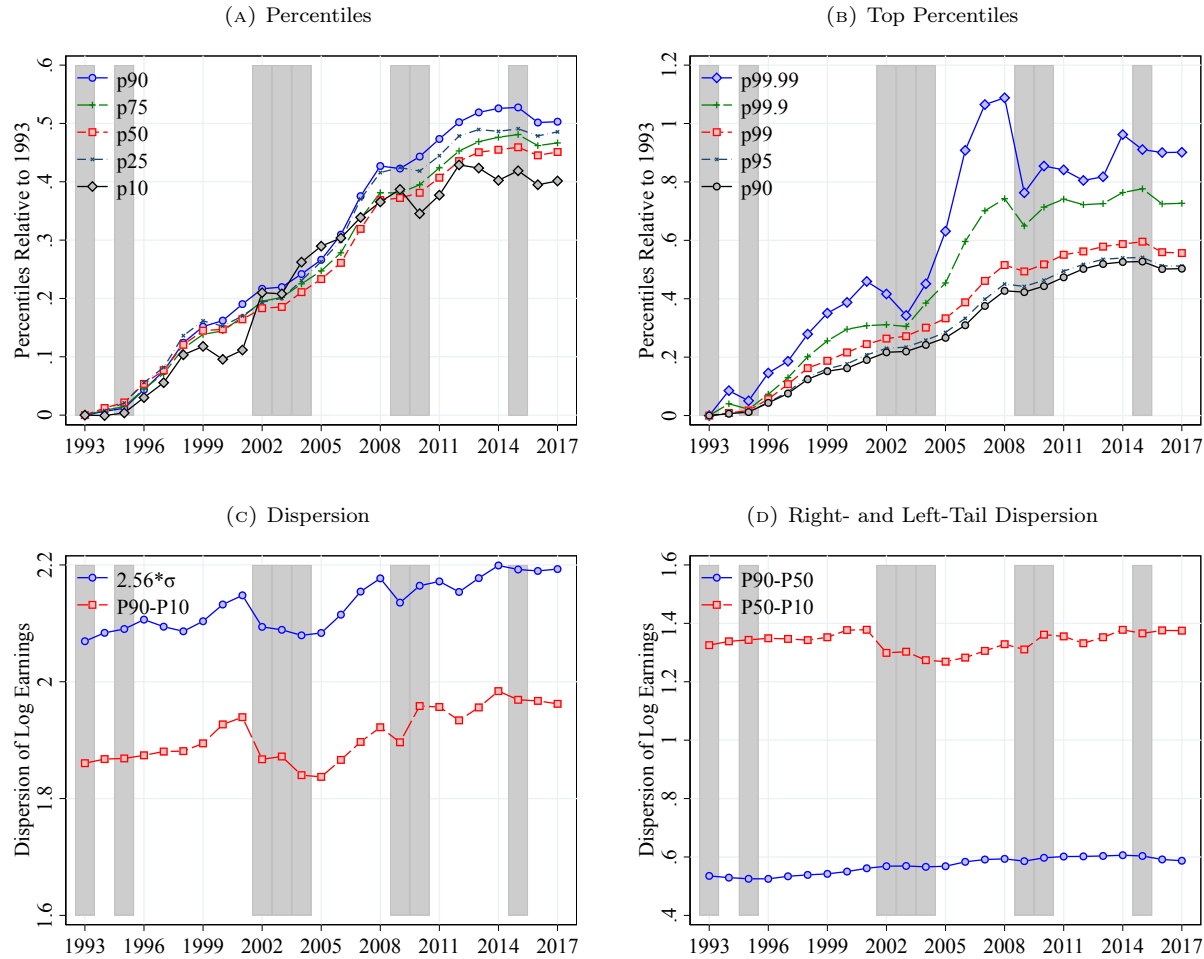
(D) Right- and Left-Tail Dispersion

Figure 10 shows ...

Figure 9 Appendix 1-2: Residuals Earnings with age dummies for the whole sample

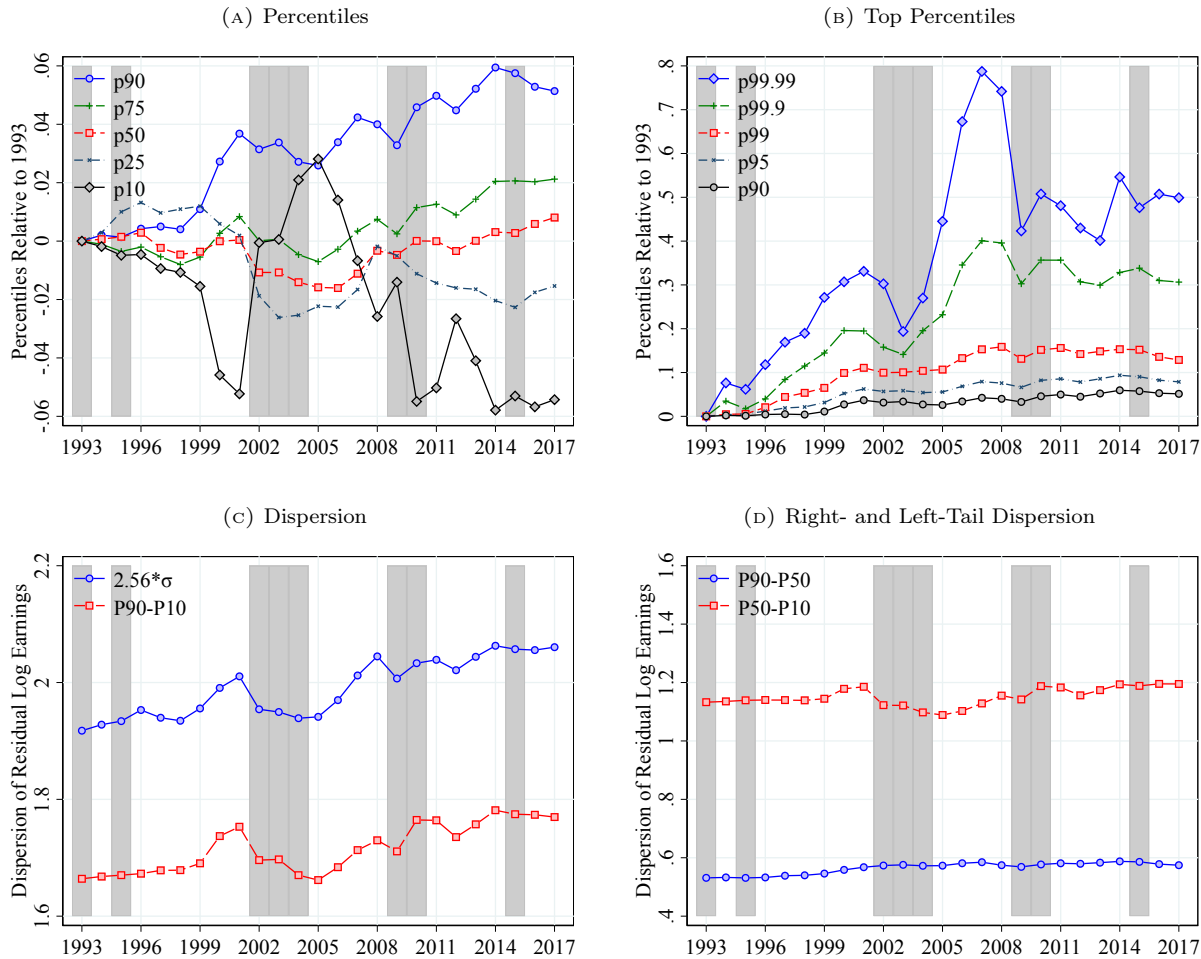FIGURE 11 – DISTRIBUTION OF RESIDUAL EARNINGS IN THE POPULATION AFTER CONTROLLING FOR AGE

(A) Percentiles

(B) Top Percentiles

(C) Dispersion

(D) Right- and Left-Tail Dispersion

Figure 11 shows ...

Figure 10 Appendix 1-2: Residuals Earnings with age and education dummies for the whole sample

FIGURE 12 – DISTRIBUTION OF RESIDUAL EARNINGS IN THE POPULATION AFTER CONTROLLING FOR AGE AND EDUCATION

(A) Percentiles

(B) Top Percentiles

(C) Dispersion

(D) Right- and Left-Tail Dispersion
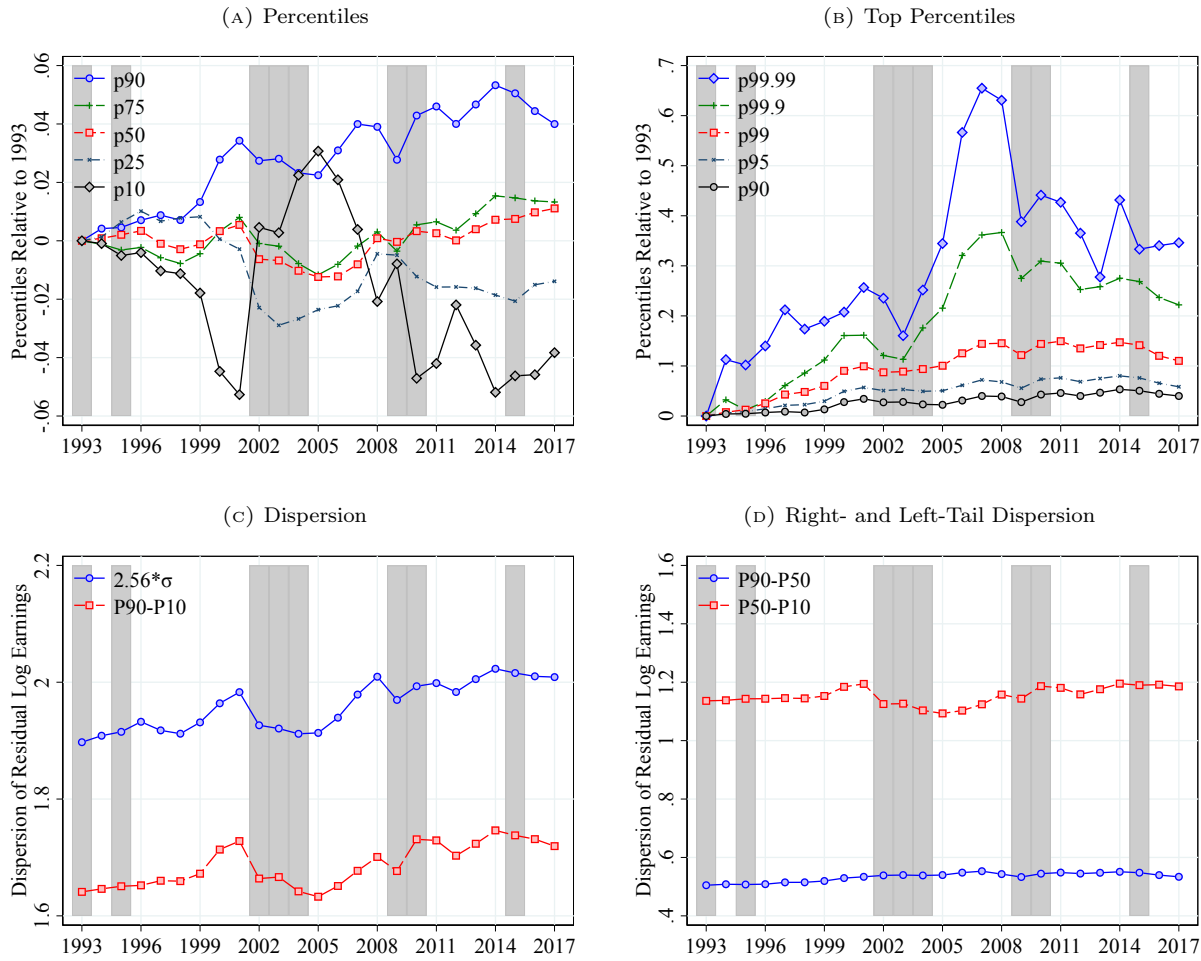
Figure 12 shows ...

Figure 11A: Pareto Tail

FIGURE 13 – TOP INCOME INEQUALITY: PARETO TAIL AT TOP 1%

(A) Men

(B) Women
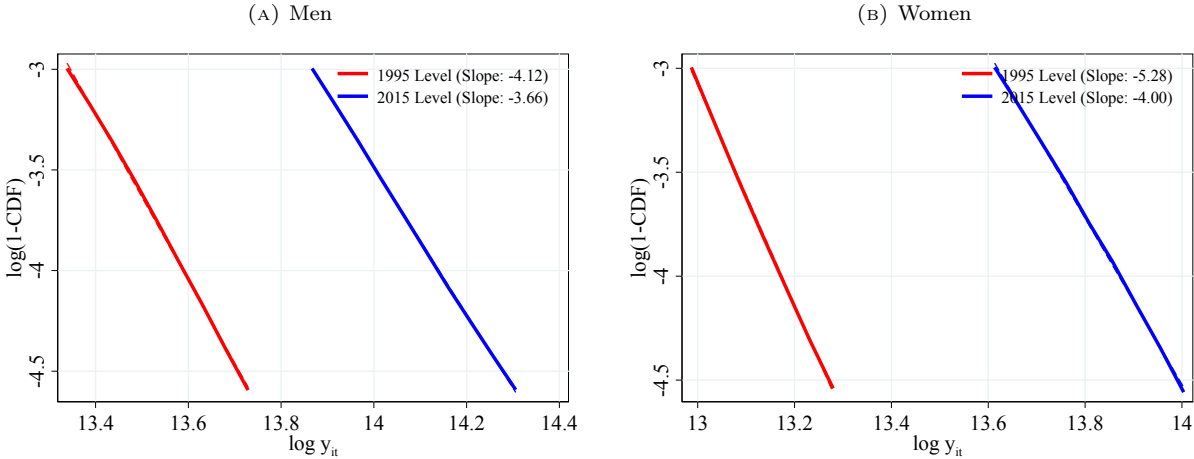
Figure 13 shows ...

FIGURE 14 – TOP INCOME INEQUALITY: PARETO TAIL AT TOP 5%

(A) Men

(B) Women
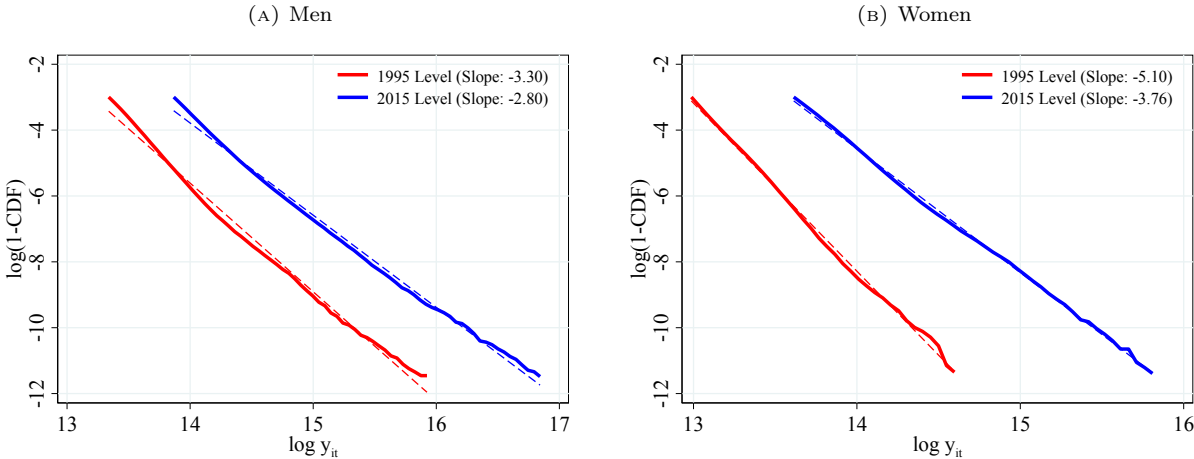
Figure 14 shows ...

Figure 11B: Income Shares

FIGURE 15 – CHANGES IN INCOME SHARES RELATIVE TO 1993

(A) Income Shares of Quintiles

(B) Selected Income Shares
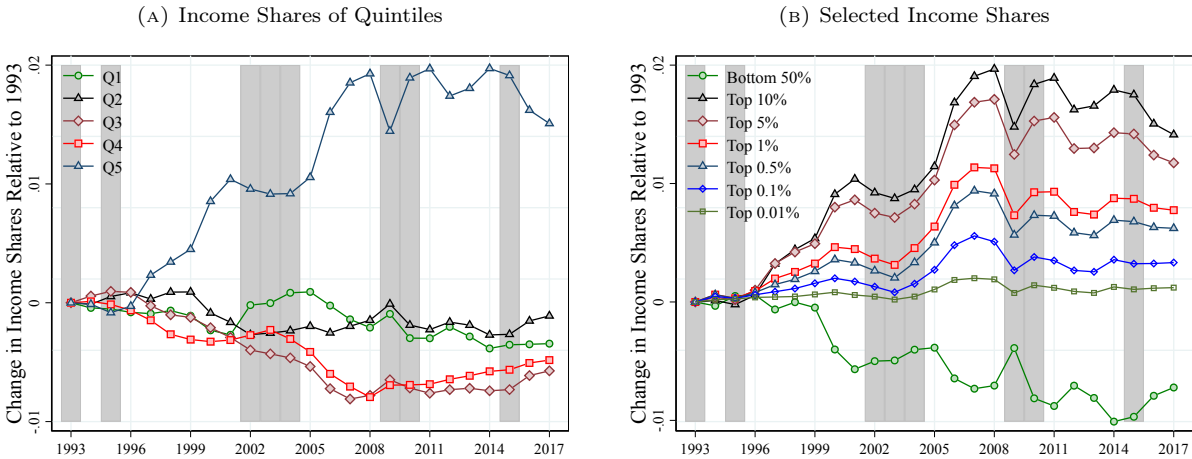
Figure 15 shows

FIGURE 16 – GINI COEFFICIENT
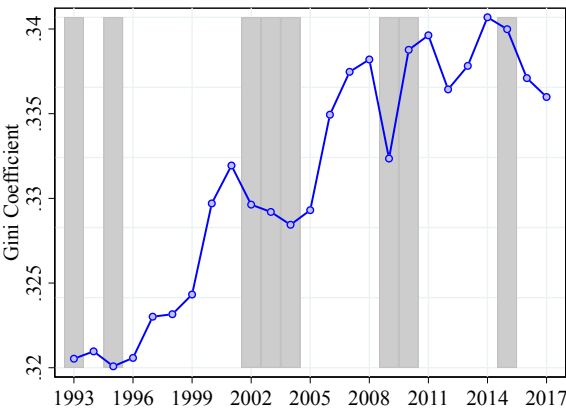
FIGURE 17 – Gini Coefficient

Figure 12 Appendix: Five-Years Earnings Change Time Series

FIGURE 18 – DISPERSION OF FIVE-YEARS EARNINGS CHANGE
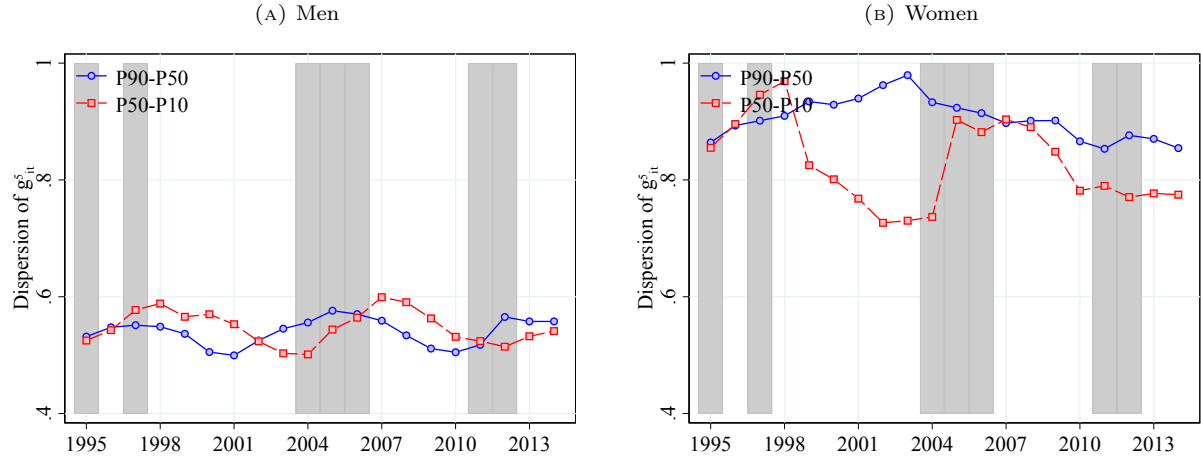
(A) Men

(B) Women

Using residual one-year earnings changes and the LS+TMax sample, Figure 18 plot against time the following variables: (a) Men: P90-10 differential, (b) Women: P90-10 differential. Shaded areas are recessions.

FIGURE 19 – SKEWNESS AND KURTOSIS OF FIVE-YEARS EARNINGS CHANGES

(A) Skewness

(B) Excess Kurtosis
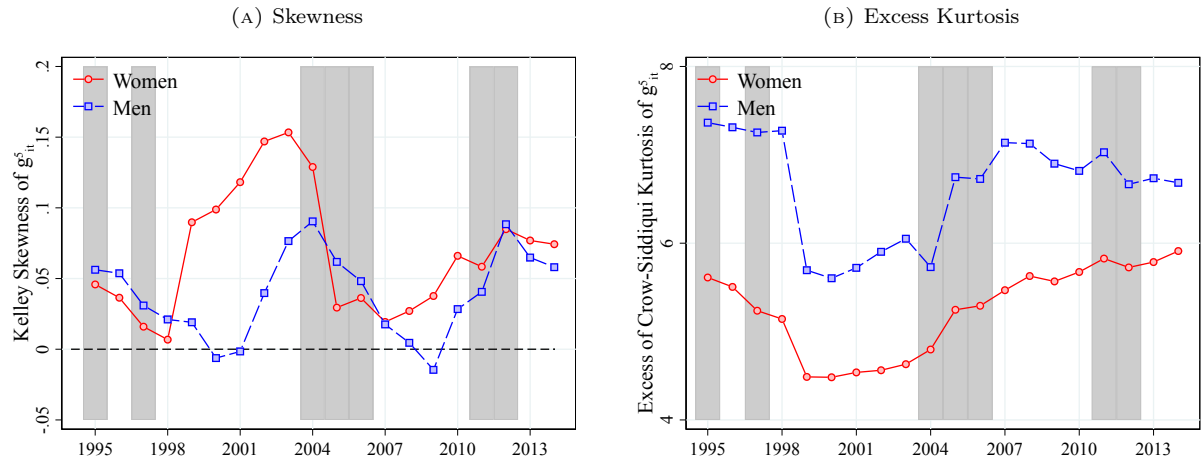
Using residual one-year earnings changes and the LS+TMax sample, Figure 19 plot against time the following variables: (a) Men and Women: Kelly skewness, (b) Men and Women: Crow-Siddiqui kurtosis. Shaded areas are recessions.

Figure 12 Appendix: Five-Years Earnings Change Earnings Change Heterogeneity and Centralized Moments

FIGURE 20 – DISPERSION, SKEWNESS AND KURTOSIS OF FIVE-YEARS EARNINGS CHANGES

(A) Men   (B) Women

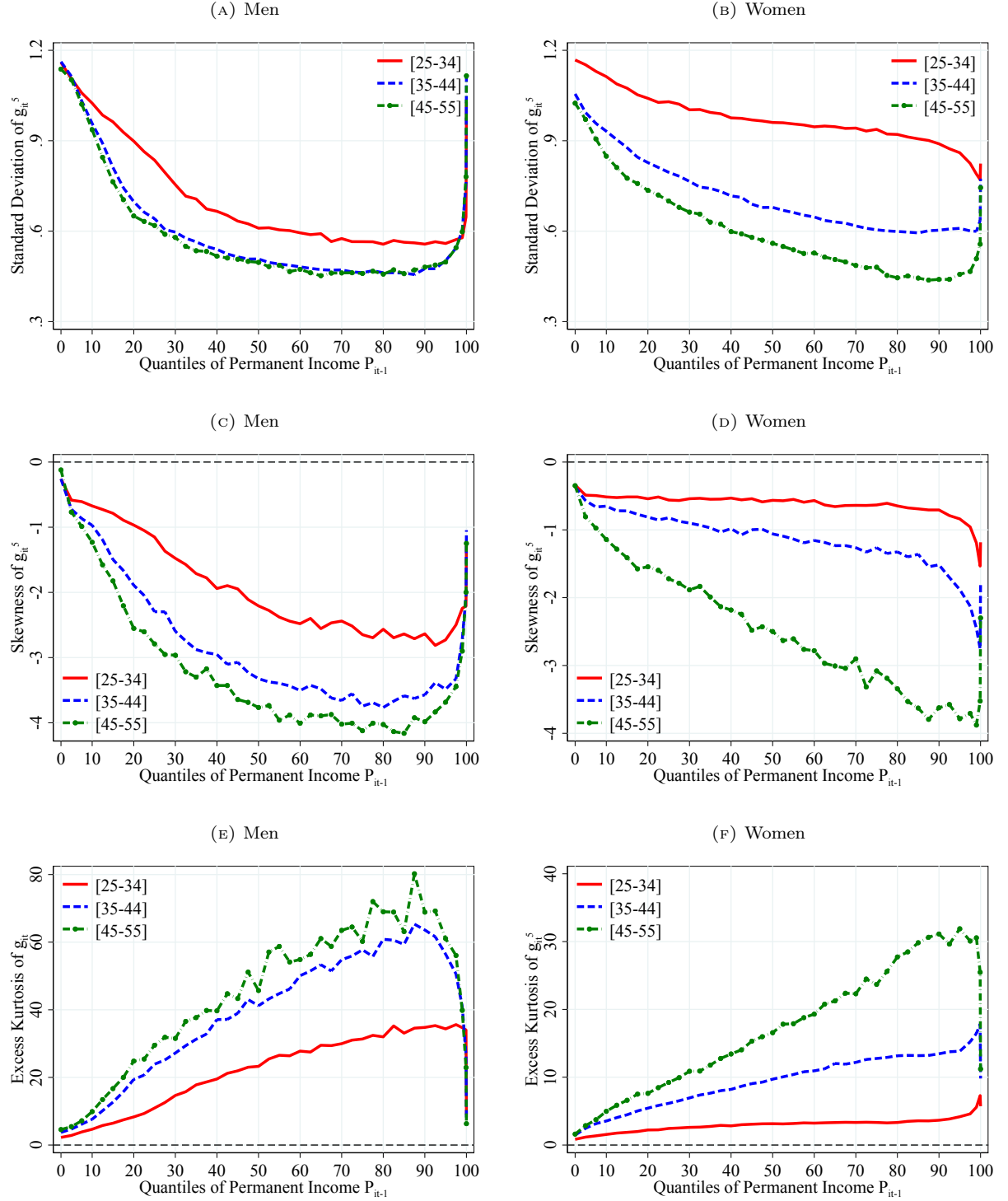(C) Men   (D) Women

(E) Men   (F) Women
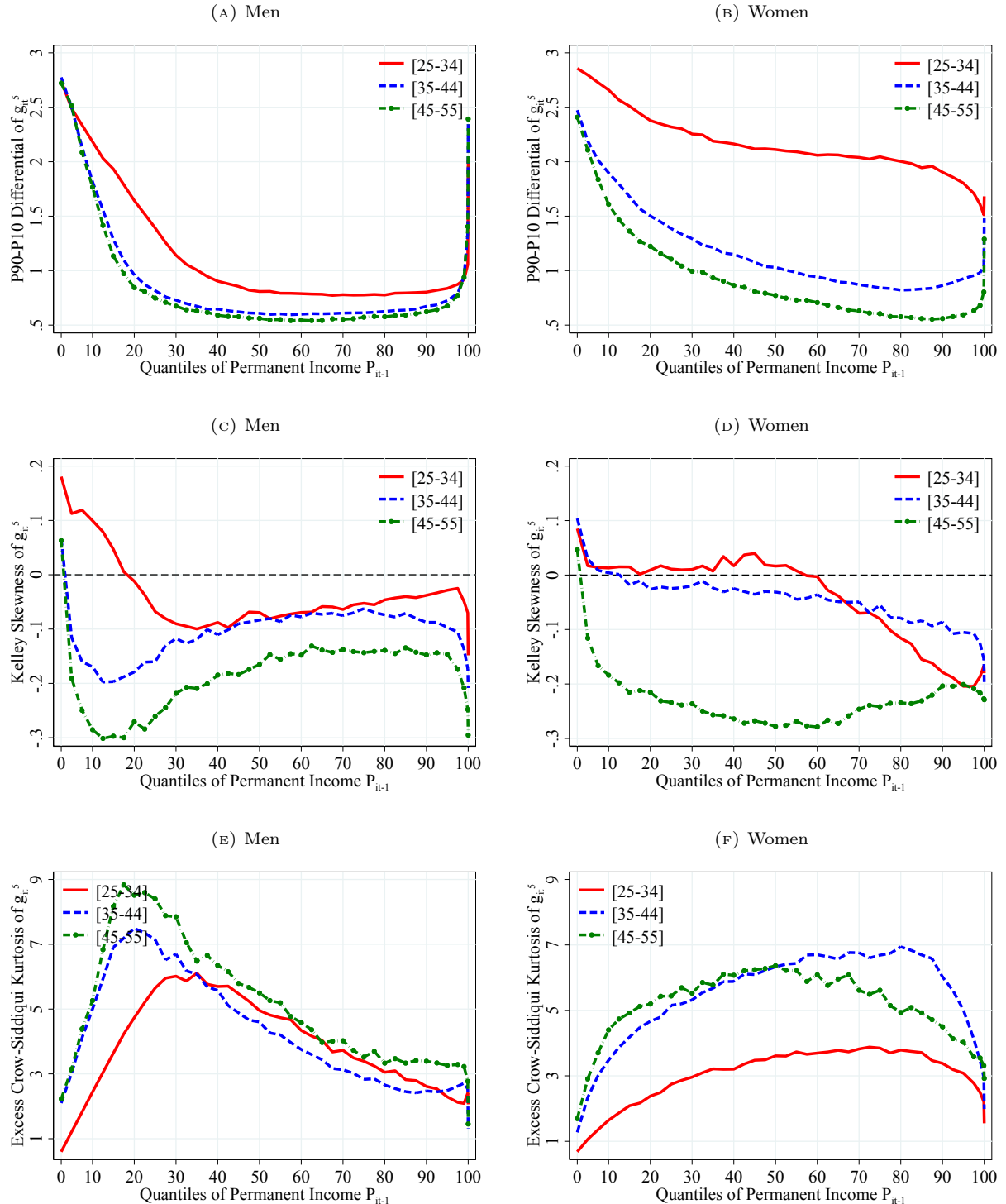
Using residual one-year earnings changes and the H+TMax sample, Figure 20 plot against permanent income quantile groups the following variables for the 3 age groups: (a) Men: P90-10, (b) Women: P90-10, (c) Men: Kelley Skewness, (d) Women: Kelley Skewness, (e) Men: Crow-Siddiqui kurtosis, (f) Women: Crow-Siddiqui kurtosis.

FIGURE 21 – STANDARDIZED MOMENTS OF EARNINGS CHANGES

(A) Men

(B) Women

(C) Men

(D) Women

(E) Men
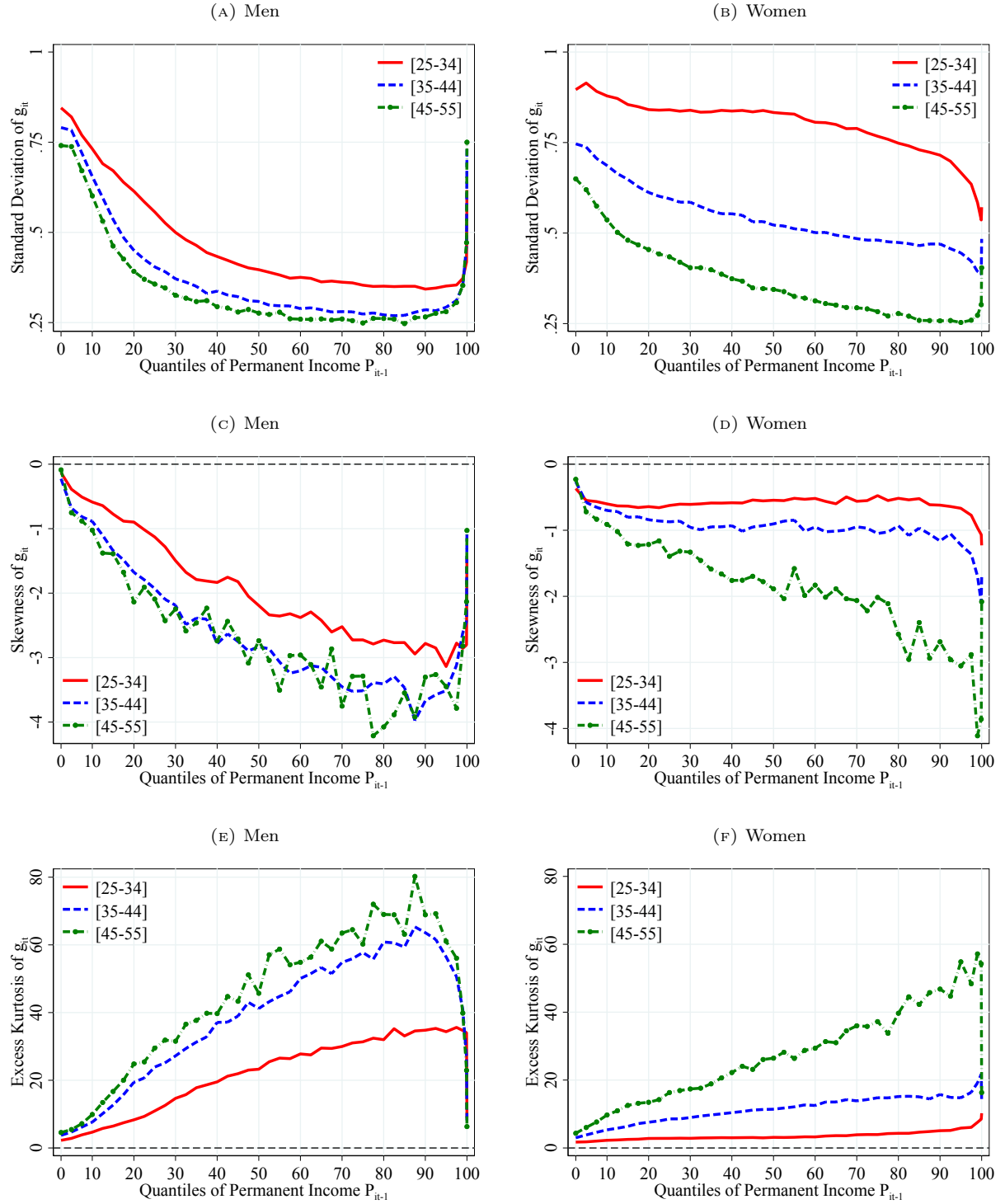
(F) Women

Using residual one-year earnings changes and the H+TMax sample, Figure 21 plot against permanent income quantile groups the following variables for the 3 age groups: (a) Men: Standard deviation, (b) Women: Standard deviation, (c) Men: Skewness, (d) Women: Skewness, (e) Men: Kurtosis, (f) Women: Kurtosis.

FIGURE 22 – STANDARDIZED MOMENTS OF FIVE-YEARS EARNINGS CHANGES

(A) Men

(B) Women

(C) Men

(D) Women

(E) Men

(F) Women

Using residual one-year earnings changes and the H+TMax sample, Figure 22 plot against permanent income quantile groups the following variables for the 3 age groups: (a) Men: Standard deviation, (b) Women: Standard deviation, (c) Men: Skewness, (d) Women: Skewness, (e) Men: Kurtosis, (f) Women: Kurtosis.

Figure 13 Appendix: Five-years Mobility
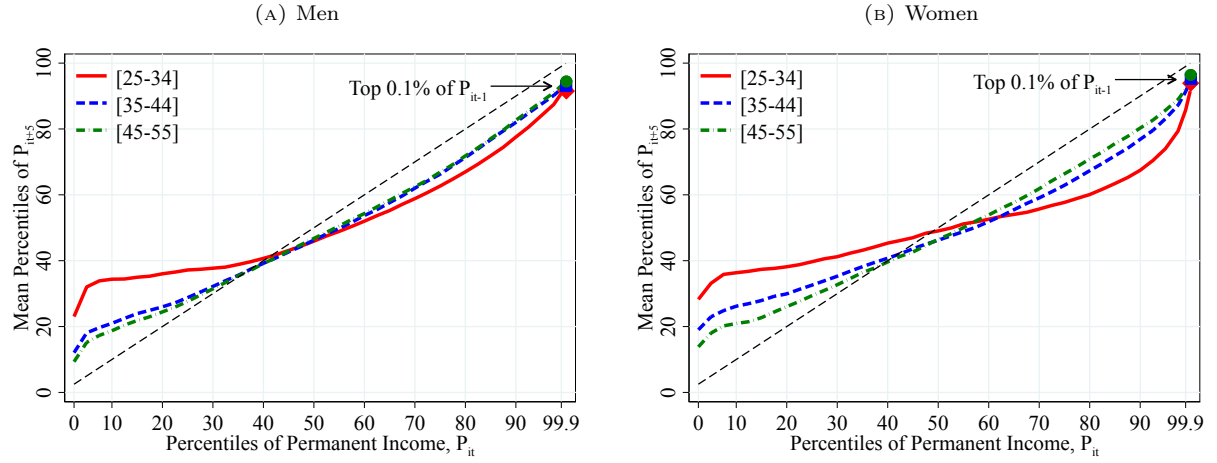
FIGURE 23 – EVOLUTION OF MOBILITY OVER THE LIFE CYCLE

(A) Men

(B) Women

Figure 23 shows average rank-rank mobility.

FIGURE 24 – EVOLUTION OF MOBILITY OVER TIME
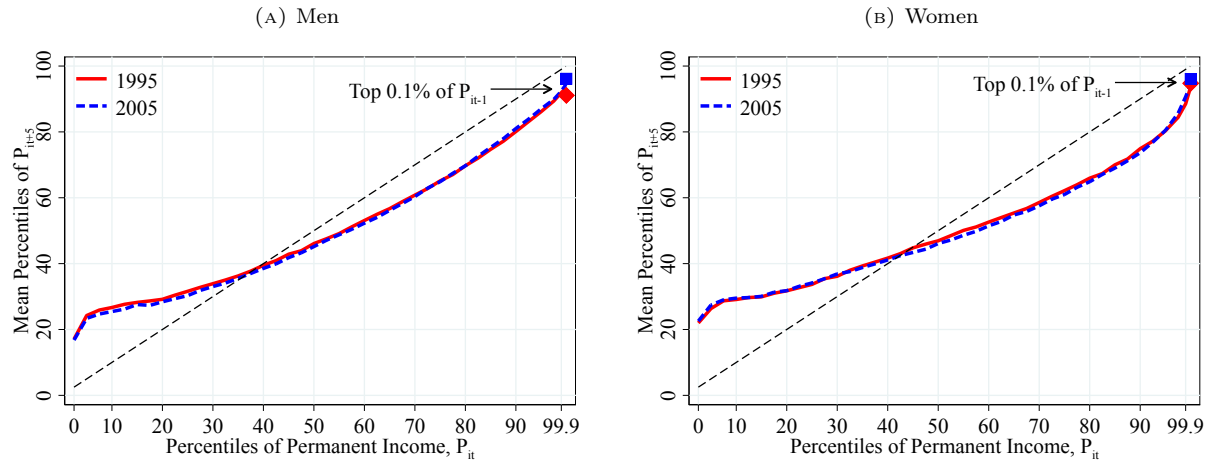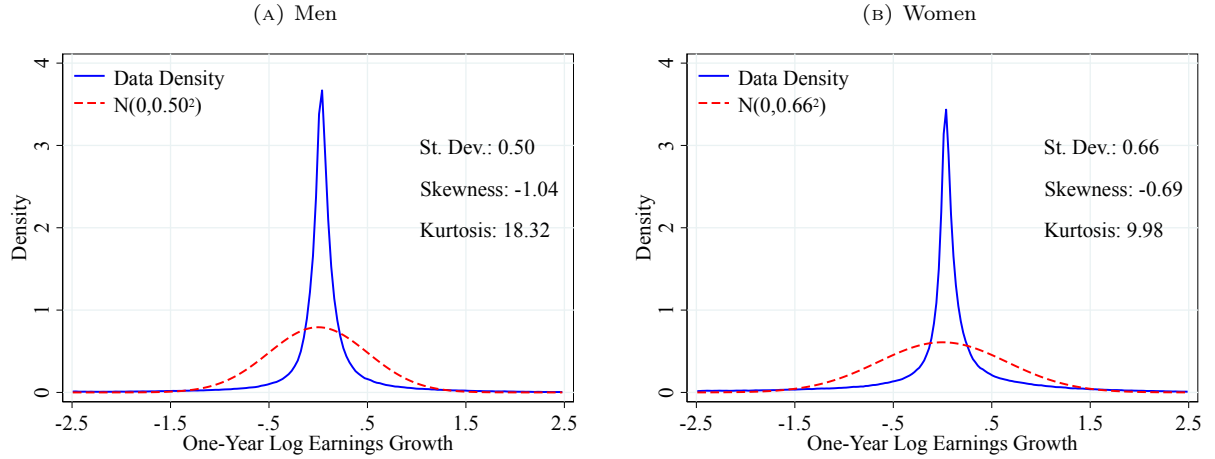
(A) Men

(B) Women
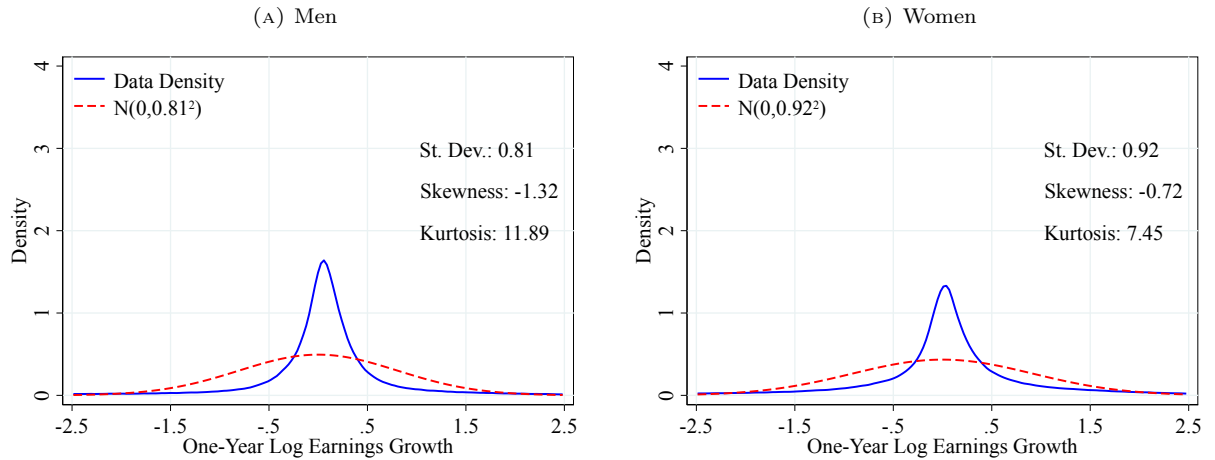

Figure 24 shows average rank-rank mobility.

Figure 14 Appendix: Density Plots

FIGURE 25 – EMPIRICAL LOG-DENSITIES OF ONE-YEAR EARNINGS GROWTH
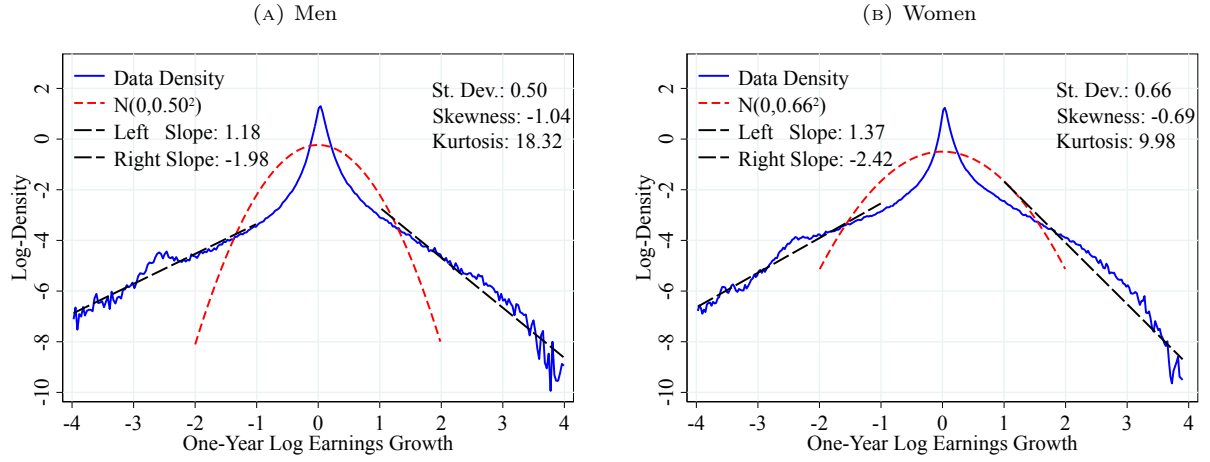
(A) Men

(B) Women

Notes: Figure 25 shows the log-density of one-year log residual earnings growth for men and women for 2005.

FIGURE 26 – EMPIRICAL LOG-DENSITIES OF FIVE-YEAR EARNINGS GROWTH
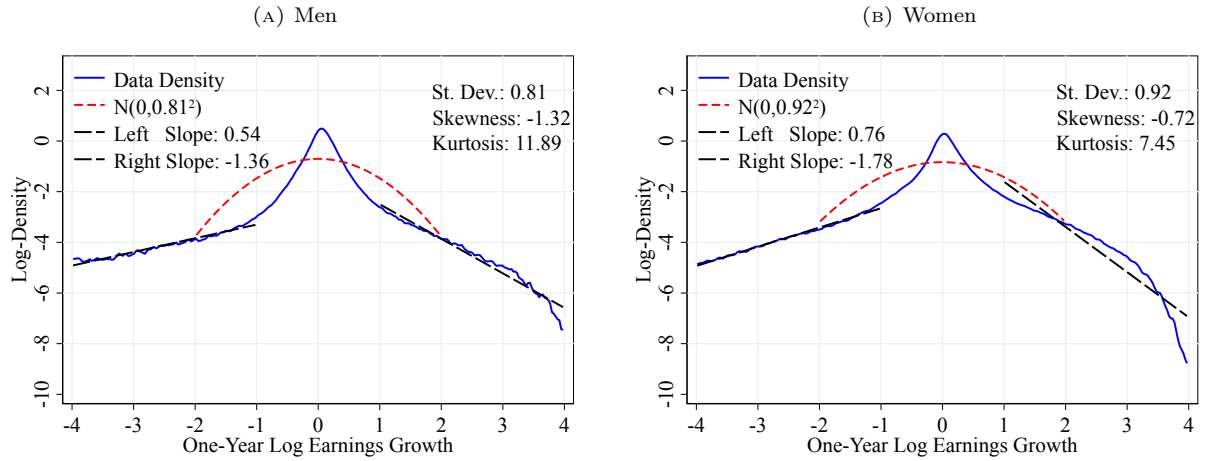
(A) Men

(B) Women

Notes: Figure 26 shows the log-density of one-year log residual earnings growth for men and women for 2005.

FIGURE 27 – EMPIRICAL LOG-DENSITIES OF ONE-YEAR EARNINGS GROWTH

(A) Men

(B) Women

Notes: Figure 27 shows the log-density of one-year log residual earnings growth for men and women for 2005.

FIGURE 28 – EMPIRICAL LOG-DENSITIES OF FIVE-YEAR EARNINGS GROWTH

(A) Men

(B) Women

Notes: Figure 28 shows the log-density of one-year log residual earnings growth for men and women for 2005.