Inequality and Income Dynamics in Ireland

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Data

Main Sample: Earnings in Levels

Main Sample: Earnings Risk

Main Sample: Earnings Mobility

Data

Data Overview

- **Dataset:** **Earnings Analysis using Administrative Data Sources** (EAADS)
  - Based on employee tax records from Revenue Commissioners (P35 and PMOD)
  - Held at Central Statistics Office (Ireland)
- **Time frame:** **2011-2022**
- **Earnings:** **Annual individual earnings before tax**
  - including bonus and benefit-in-kind, and excluding pensions and severance payments
- **Sample:** **10 percent sample of employees**
  - $\approx$ 190-230k per year
  - $\approx$ 120-160k per year in GRID CS sample
  - Includes earnings from all employments
  - Excludes self-employment
  - Excludes "extremely high earnings values": $y \geq 3 \times (p75 - p25) + p75)$
- **GRID Covariates:** **Gender, Age Group**
- **Also available:** NACE Principal Activity, Public/Private Sector status, Nationality, Region

On the horizon: a longer time series

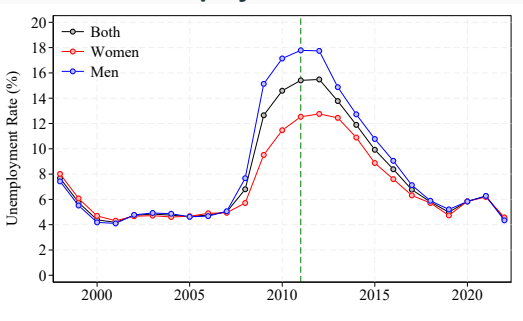
Waiting for access to longer time series (we have approval and server access!)

- **Dataset:** **Welfare and Work Longitudinal Database**
  - Based on social security records from Department for Social Protection
- **Time frame:** **1970s to present**
  - Reliable coverage from 1990s
- **Earnings:** **Annual individual earnings before tax**
  - including (taxable) bonuses and benefits-in-kind, excluding pensions and severance payments
- **Sample:** **population of employees and self-employed**
  - approx 1.1m per year
  - Includes earnings from all employments and self-employment
- **GRID Covariates:** Gender, Age Group
- **Also available:** payroll identifier

The Irish Economy

Modified Domestic Demand

Unemployment Rate

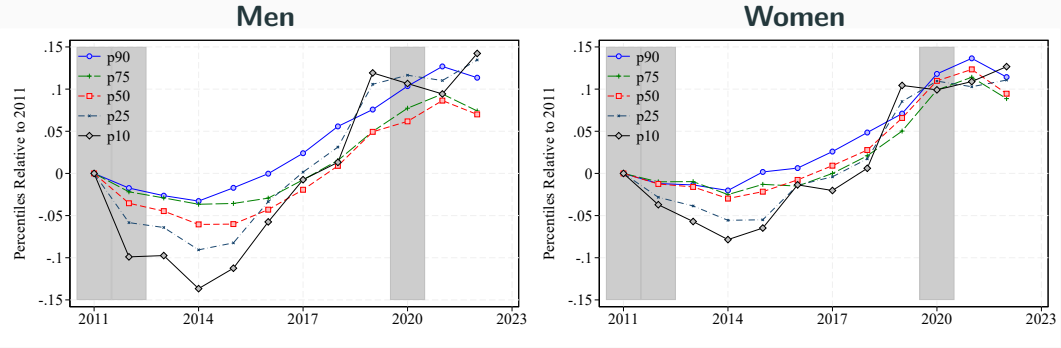


Ireland: three takeaways

1. **Inequality:** Broad-based **decline** and notable **rebound** since Great Recession
2. **Risk:** Low-modest levels of risk, especially in the tails
3. **Mobility:** Middle of the pack

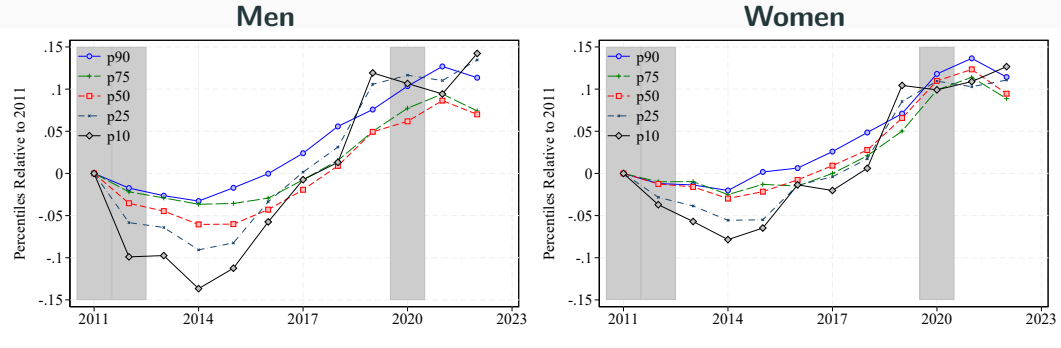
Main Sample: Earnings in Levels

Percentiles of the Log Real Earnings Distribution Relative to 2011



- At least five years of nominal earnings declines at every ptile below 99th
- **UK** + **Spain:** similar declines across dist; but no rebound
- **US** mostly rebounding by 2011

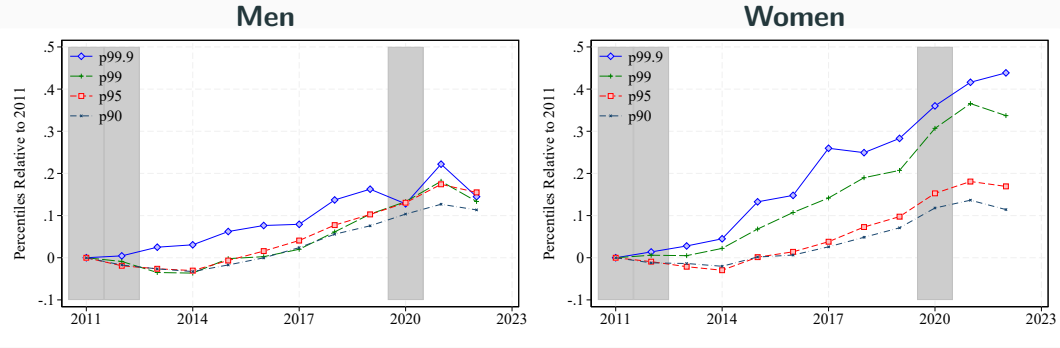
Percentiles of the Log Real Earnings Distribution Relative to 2011



- Inequality (P90-P10) widened, but ended flat
- But, level of inequality is high in 2022: $\log y_{p90} - \log y_{p10} \approx 2$
- **US** $\approx$ 2.3-2.36; **UK** $\approx$ 1.4 -1.6; **Denmark** $\approx$ 0.9-1.1
- **Ireland** is more equal after (i) tax + benefits, and (ii) household composition

[Roantree-Maître-Russell 24]

Zooming into the Top Percentiles



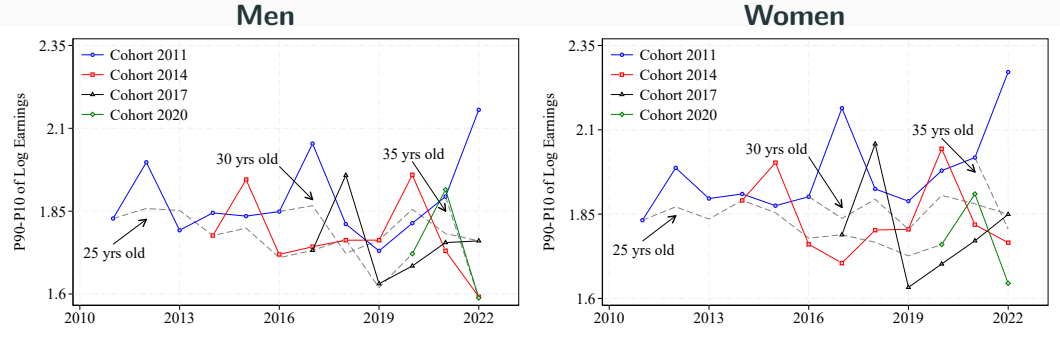
- Women grow $\approx 2x$ at top p-tiles

$\Longrightarrow$ Convergence in **gender earnings gap**:

  - **top 0.1%:** 1.52 to 1.41
  - **top 1%:** 1.41 to 1.39; **Median:** flat at 1.2

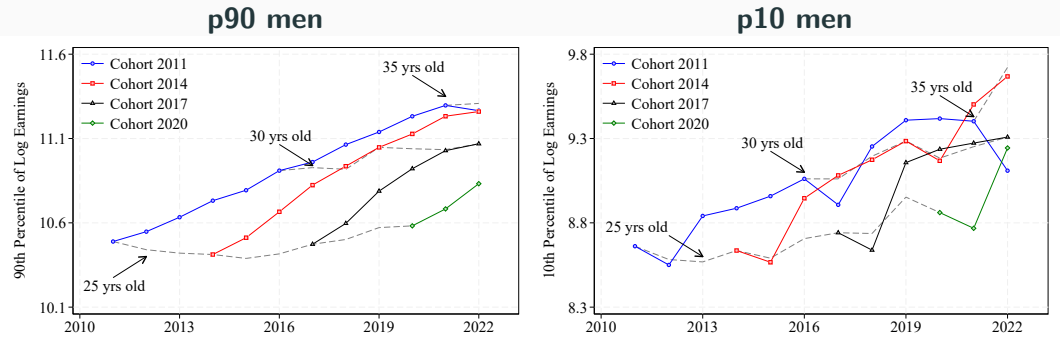
- Grid v1: gender convergence comes from bottom (p50p10)

P90-P10: by Cohort and Gender



- Little change in P90-P10
- Lets look at cohort trends in P90 and P10 separately

P90 & P10: by cohort

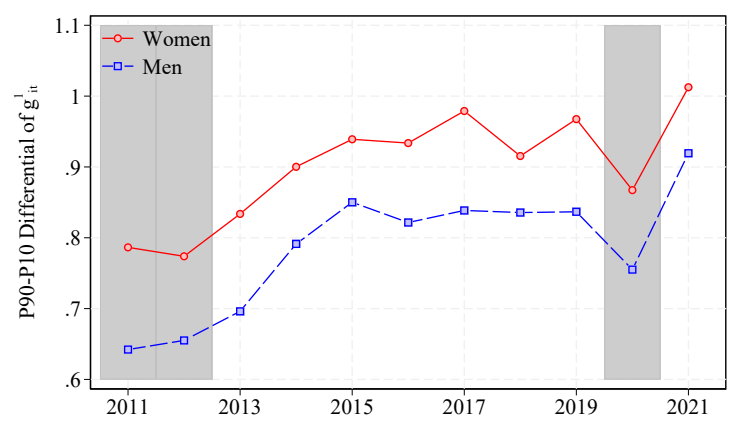


- Consistent with scarring in the upper half of the 2011 cohort

[Roantree-Maître-McTague-Privalko 21]

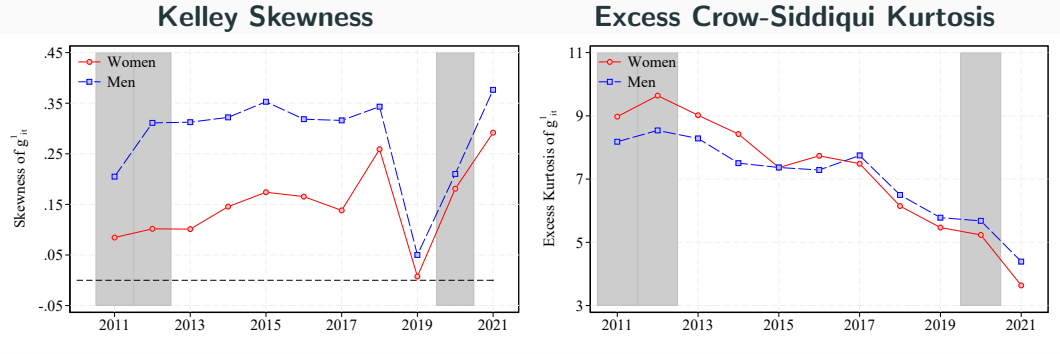
Main Sample: Earnings Risk

Volatility of Earnings Growth P90-P10



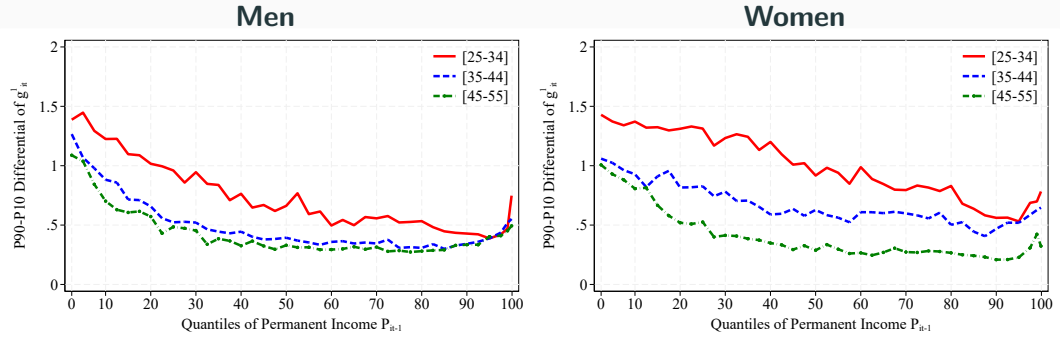
- Rise comes from widening of earnings growth: P9050
- Low to median volatility $\sigma(g^1_{i,2015}) = 0.49$

Higher Moments: Skewness and Kurtosis



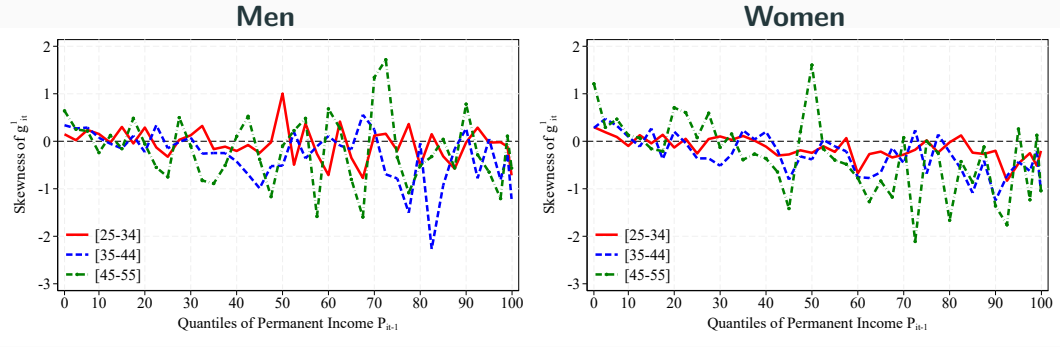
- **Thin Pareto Tails:** right tail index is -3.07
- **GRID v1: Thick:** US -2.14; **Thin:** Sweden -3.12; Denmark -2.97
- Similar for the left tail

Dispersion of Earnings Growth by Permanent Income and Age



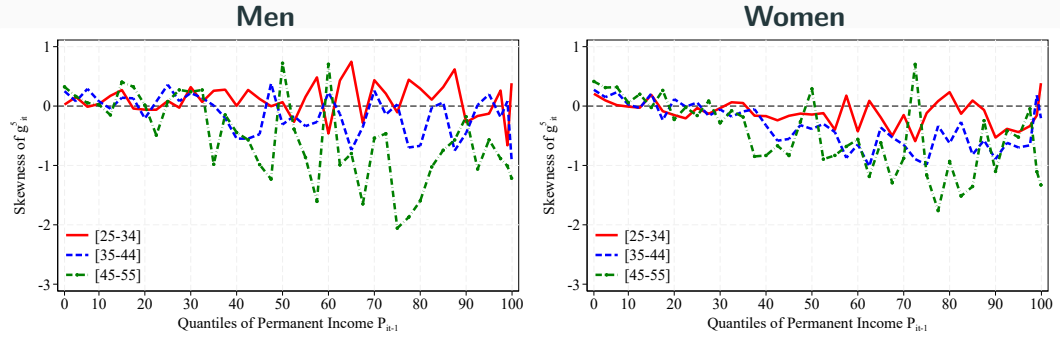
- Consistent with GRID v1: higher volatility for
  (i) lower incomes, (ii) top income percentile, and
  (iii) younger age groups
- Perhaps not as convex as other countries

Skewness of Earnings Growth by Permanent Income and Age



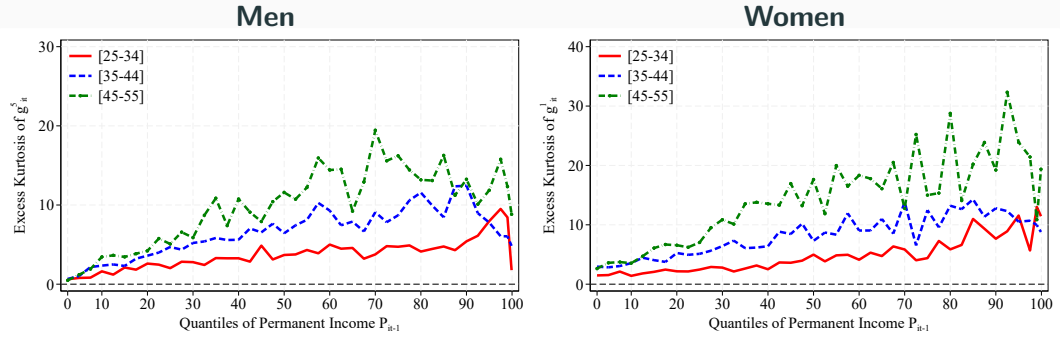
- Very noisy at 1-yr horizon

Kelley Skewness of Earnings Growth by Permanent Income and Age



- Noisy evidence consistent with GRID v1: skewness more negative for (i) higher income and (ii) older individuals

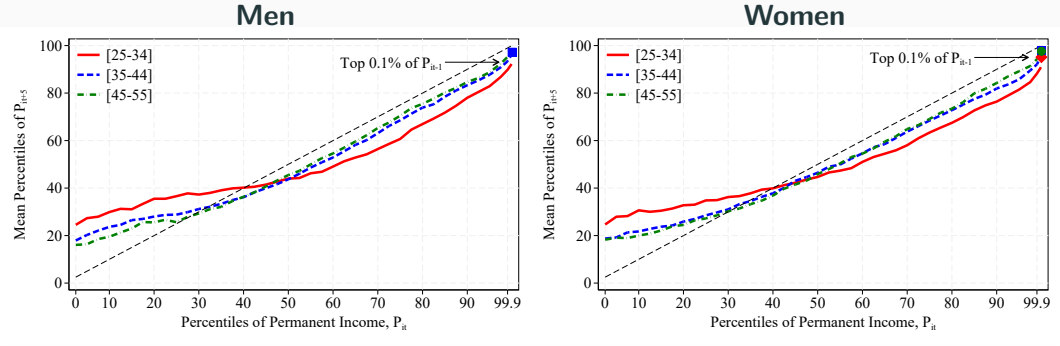
Kurtosis of Earnings Growth by Permanent Income and Age



- Consistent with GRID v1: kurtosis is higher for
  (i) higher income and (ii) older individuals

Main Sample: Earnings Mobility

Income Mobility: Rank-Rank Measures by Age



- Rank-rank slope $\beta = 0.75$: $P_{i,t+5} = \alpha + \beta P_{i,t} + i$
- **Middle of the pack:** Similar to US/Canada/Germany ($\beta \approx 0.75$);
  Max (Brazil/UK $\beta = 0.87$), Min (Sweden $\beta = 0.67$)

Ireland: main takeaways

Earnings in levels

1. **Large, broad-based decline** in earnings in aftermath of Great Recession
2. ...with **notable broad-based rebound** since 2014 ("Celtic Phoenix")
3. **Flat inequality** in terms of P90-P10 over the decade
4. Rise in **top inequality for women** (above P90)

Earnings Risk

5. Low to modest levels of income risk
   Patterns largely consistent with GRID v1.0

Earnings Mobility

6. **Middle of the pack** in terms of 5-yr rank-rank correlation

Stay tuned: more to come, especially the 1990-00s boom ("Celtic Tiger")

Appendix

Sample: Irish Citizen's Only

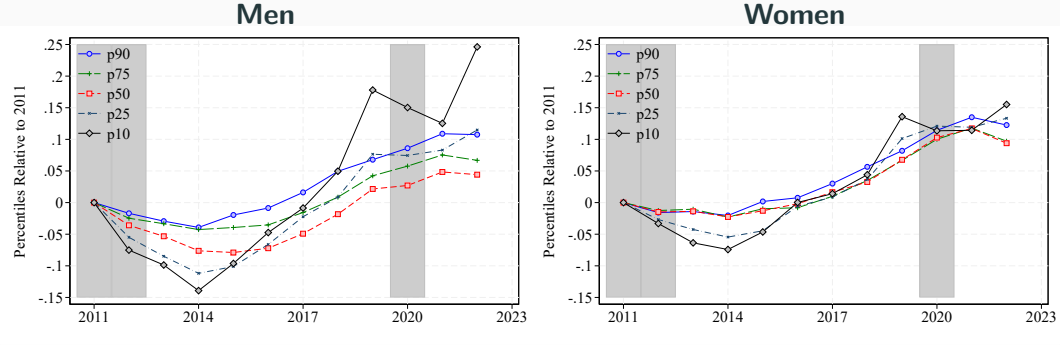
Sample: Private Sector Only

Appendix: Main Sample, Extra Material

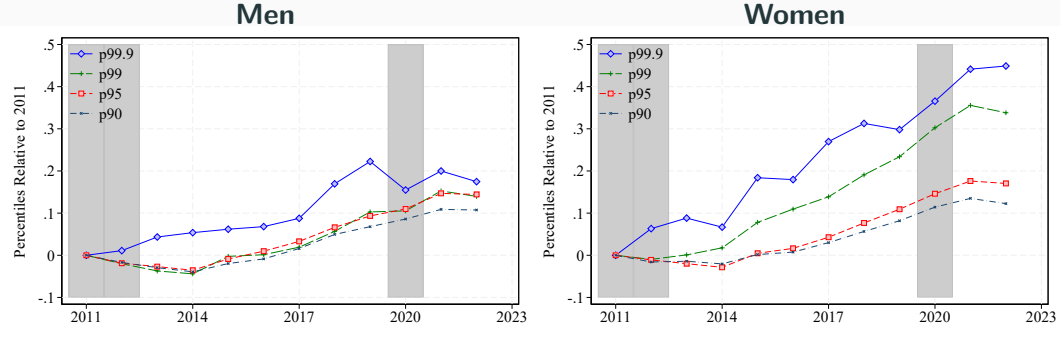
GRID: Global Repository on Income Dynamics

Sample: Irish Citizen's Only

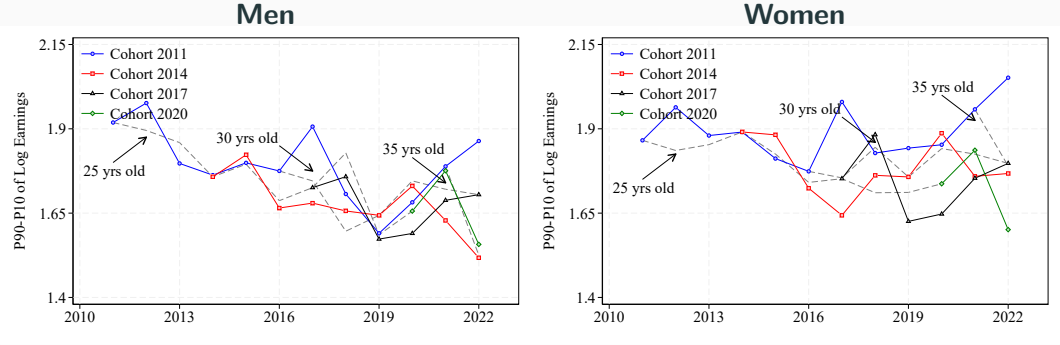
Percentiles of the Log Real Earnings Distribution Relative to 2011



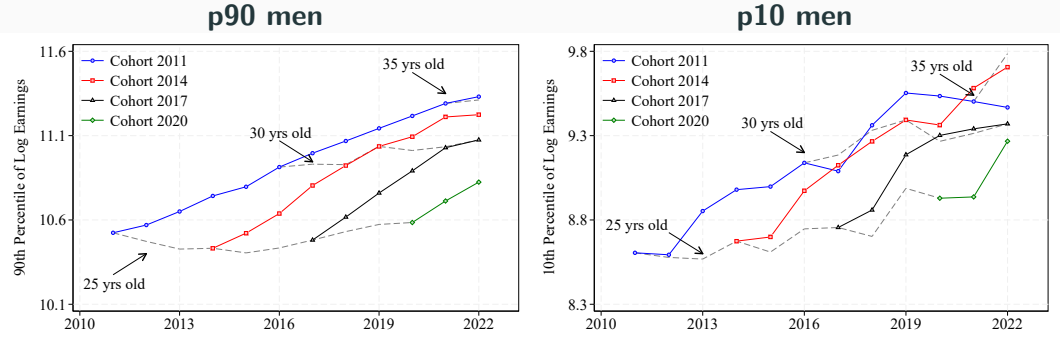
Zooming into the Top Percentiles



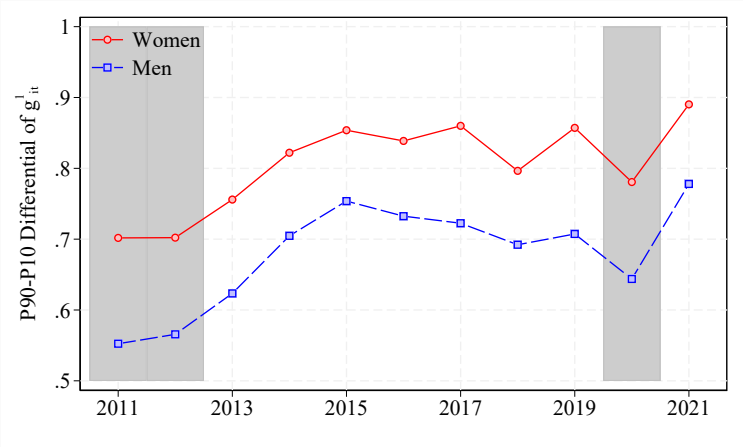
P90-P10: by Cohort and Gender



P90 & P10: by cohort

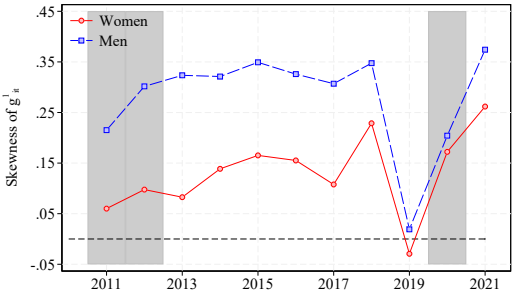


Volatility of Earnings Growth P90-P10



Higher Moments: Skewness and Kurtosis

Kelley Skewness



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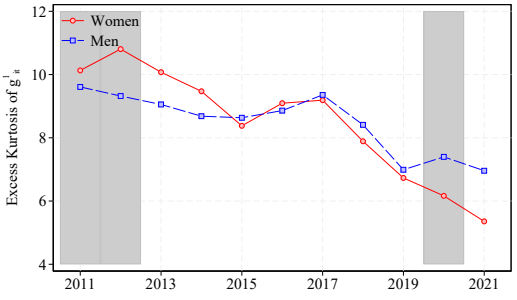

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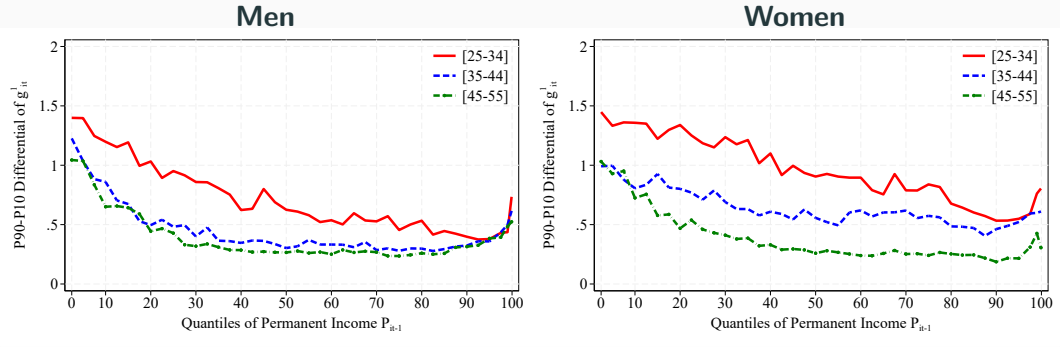

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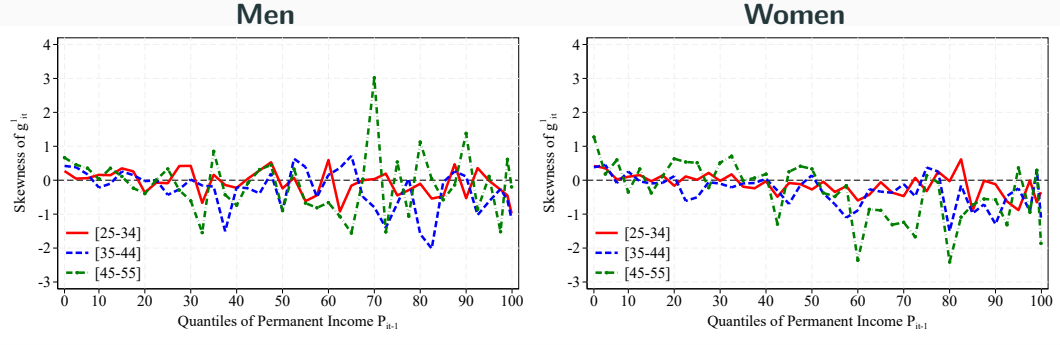

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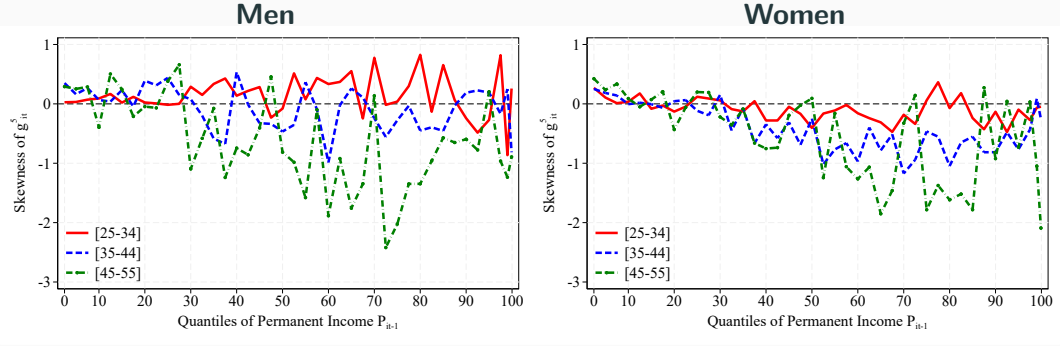

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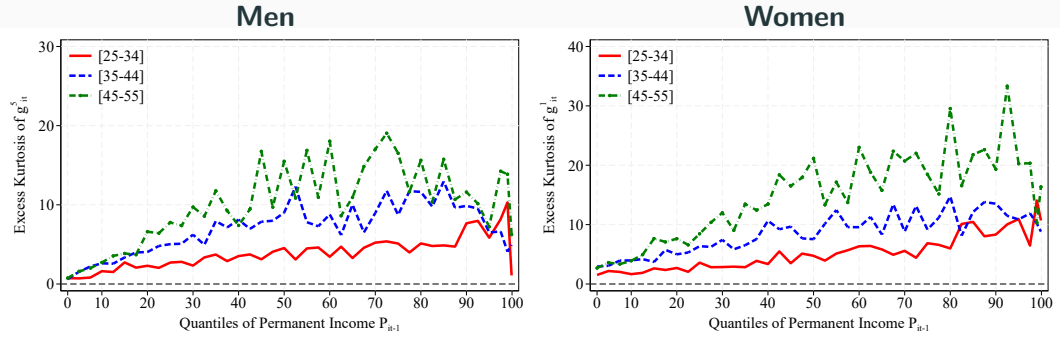

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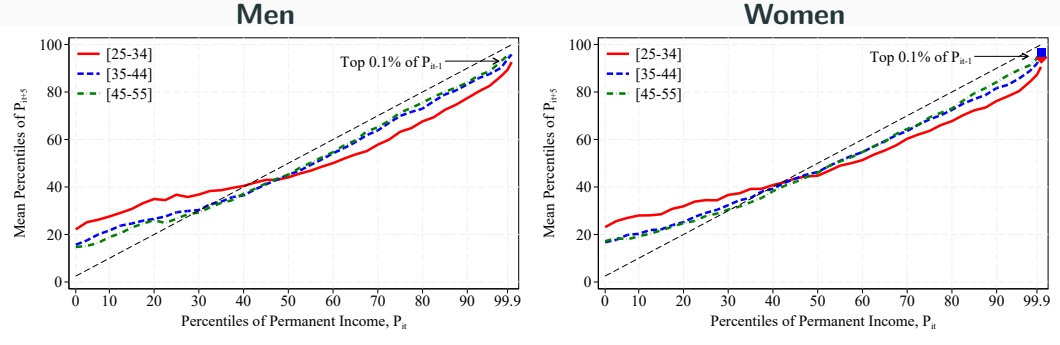

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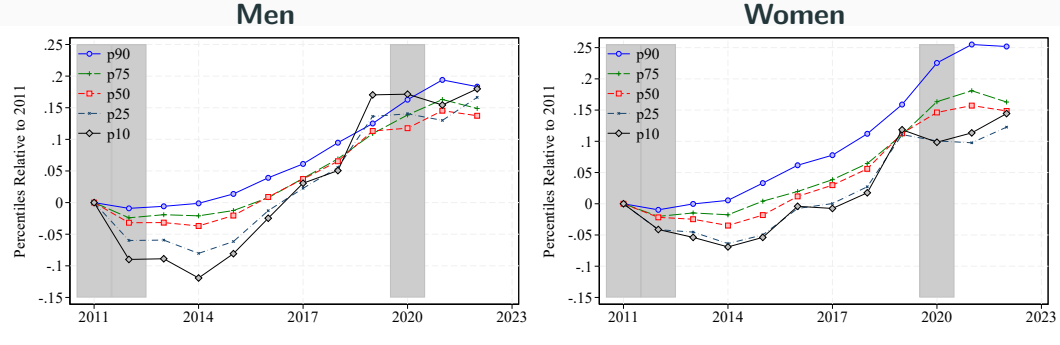

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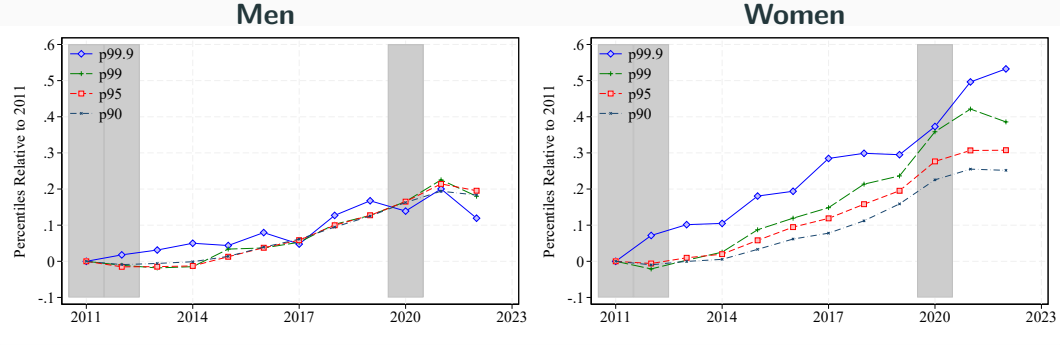

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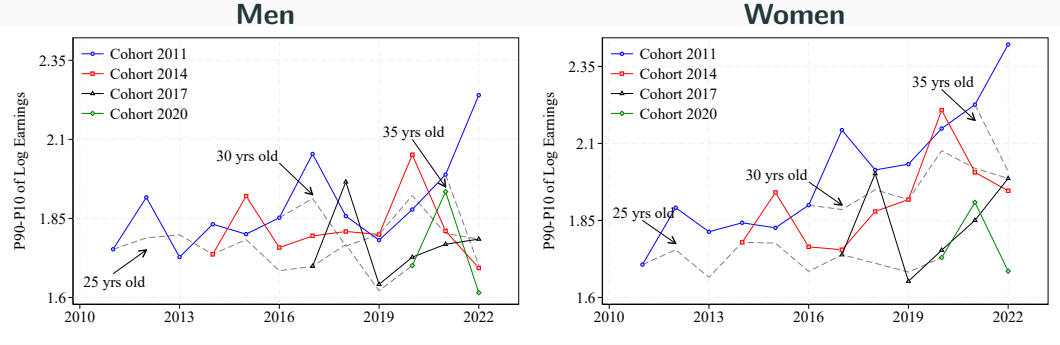

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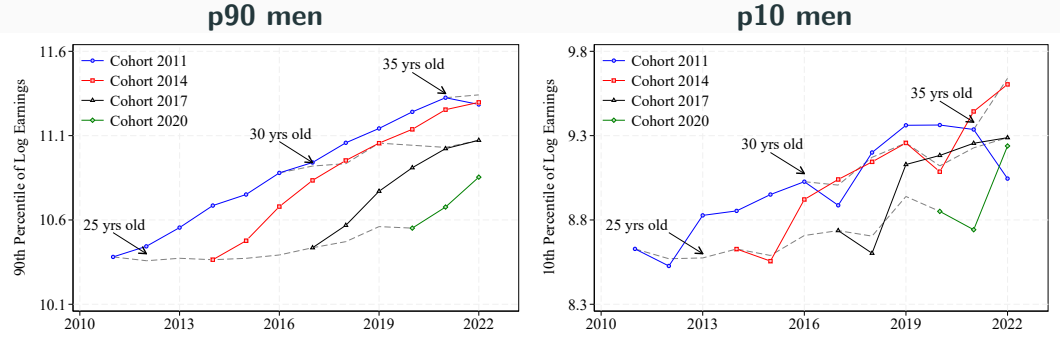

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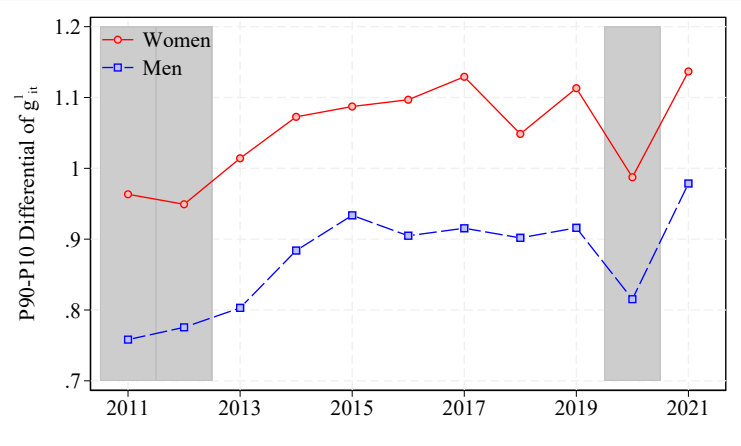

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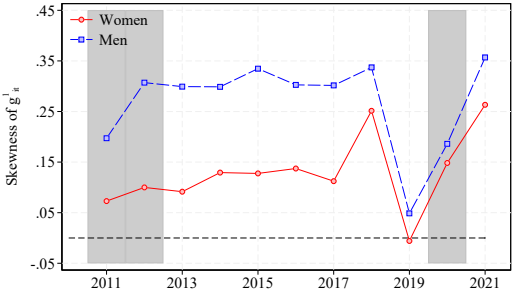

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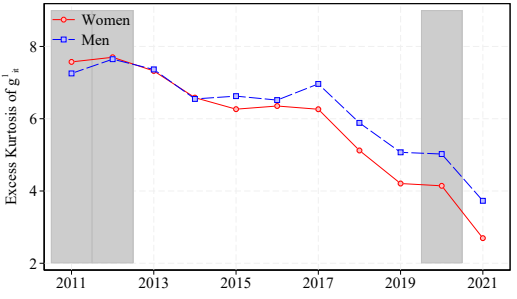

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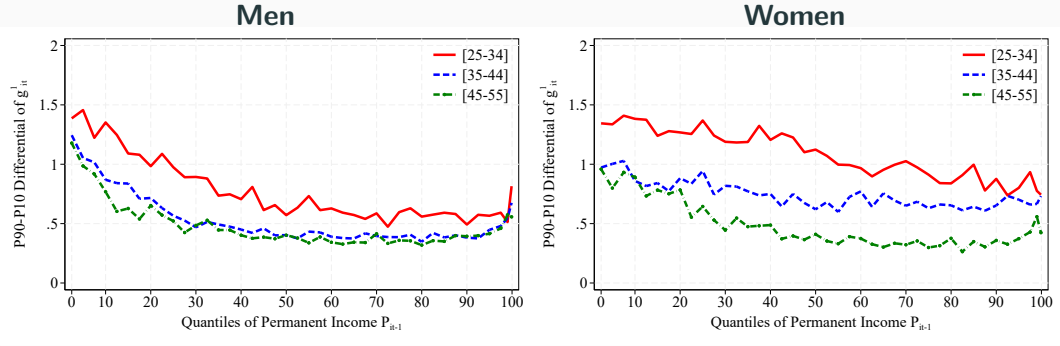

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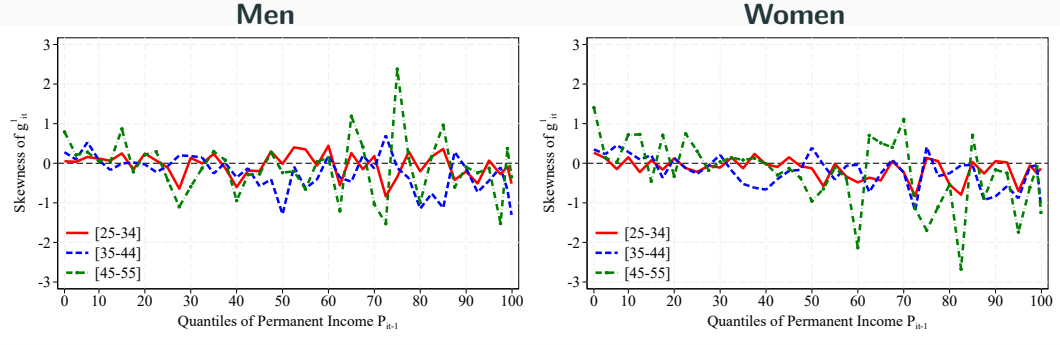

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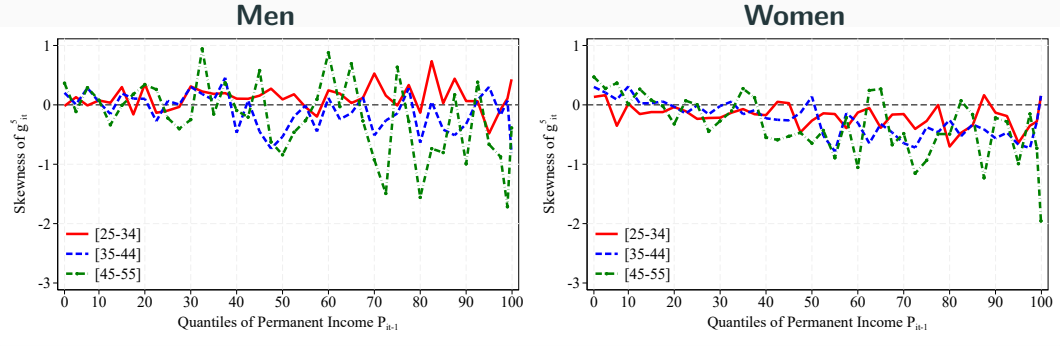

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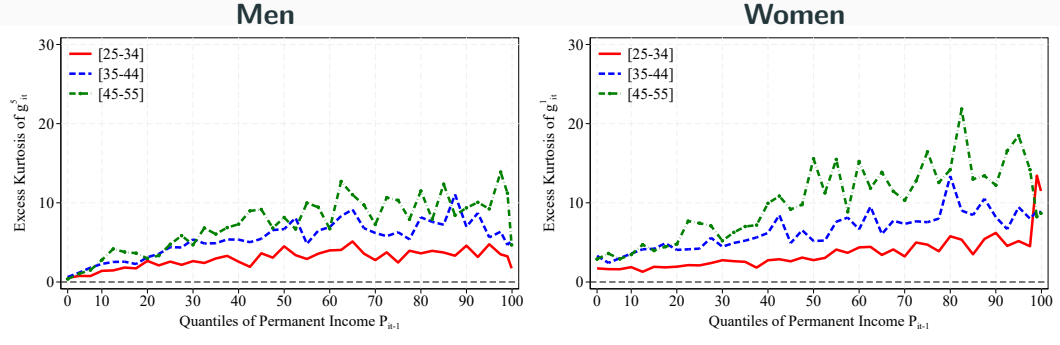

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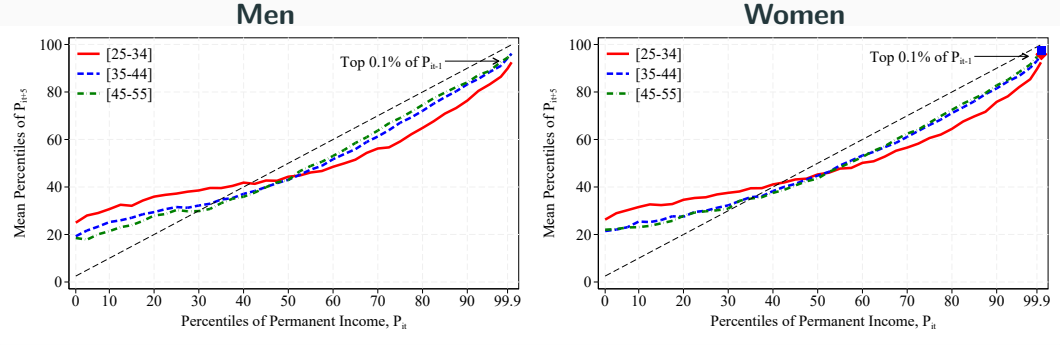

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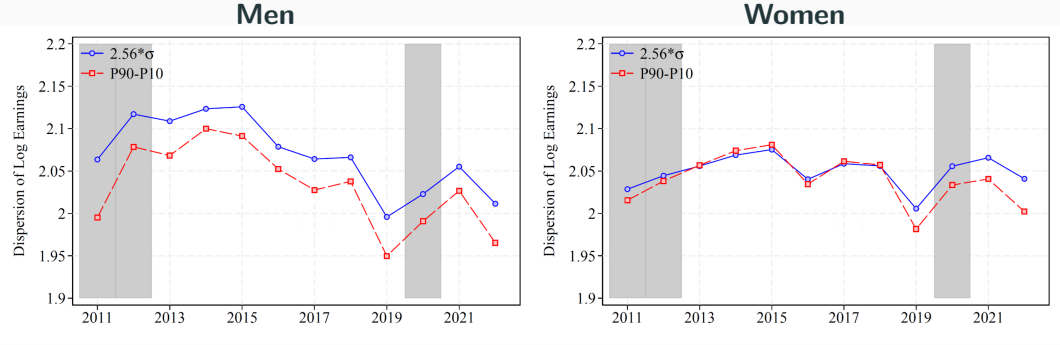
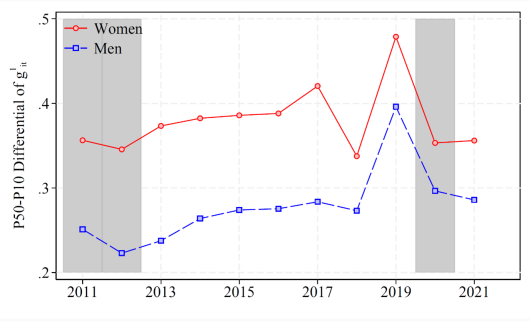
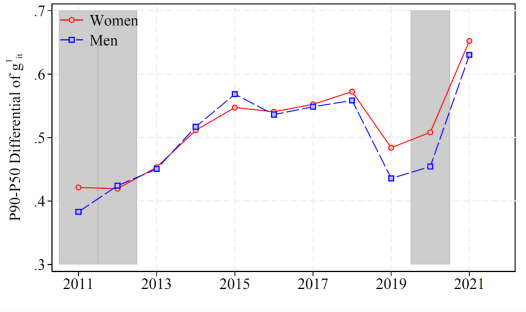


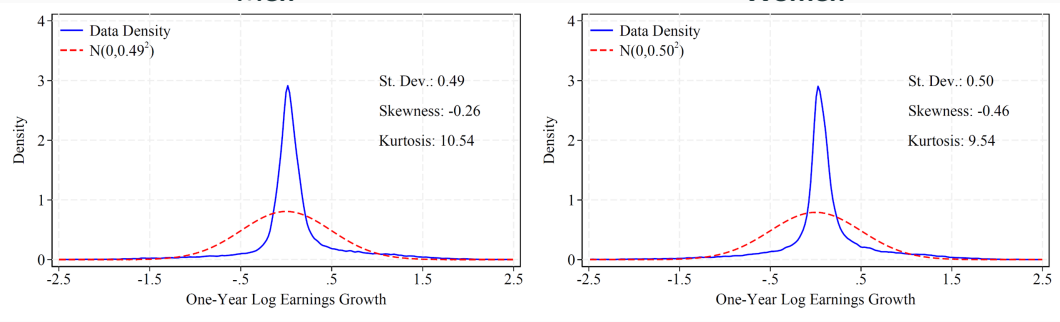
Earnings Falls: P50P10



Earnings Growth: P90P50



Inspecting the Density



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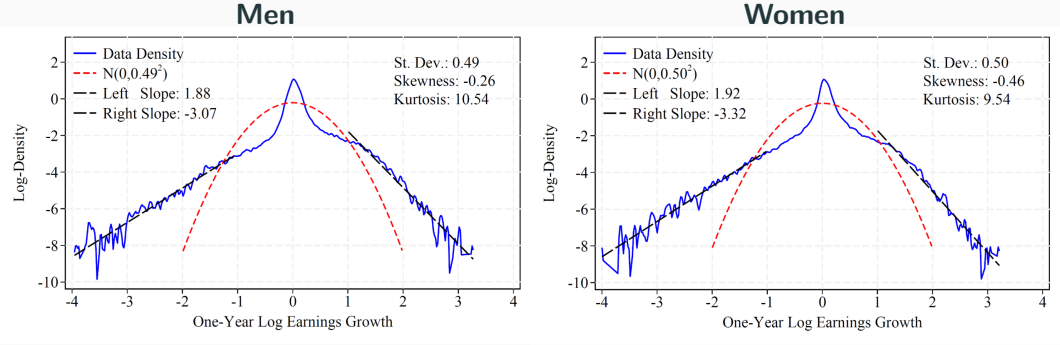

GRID: Global Repository on Income Dynamics

What is GRID?

- open access, cross country database
- micro stats on incomes inequality, dynamics, and mobility
- longitudinal, administrative, granular, and harmonized

- **Wave 1:** 13 countries including Scandinavians, UK, and US
  - Online: you can download now!
- **Wave 2:** Ireland and $\approx$ 15 others
  - Coming soon: end of 2024!

Investigate three types of inequality

1. **Levels:** log earnings
   - changes across the distribution and across time
2. **Risk:** residual log changes
   - document the distribution: volatility, skewness, kurtosis
   - how it varies by permanent income
3. **Mobility:** persistence of income rank