The GRID Project: An Overview and Some New Insights

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WCEG Webinar

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Goal: To build an open-access, cross-country

1. harmonized database
2. of detailed micro statistics
3. on income inequality & income dynamics
4. based on panel data
5. from administrative records

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- A Special Issue of *Quantitative Economics* with 13 papers written by country teams was published in November 2022.

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- Goal is to have 40 countries in GRID by Summer 2024.

Background: Data on Income Inequality

- Several harmonized cross-country databases (of statistics) on income inequality are available:
  - World Inequality Database (WID.world) spearheaded by the work of T. Atkinson, T. Piketty and E. Saez
  - World Income Inequality Database (WIID2) maintained at the United Nations University
  - OECD Income Distribution Database (IDD)
  - Luxembourg Income Study (LIS)

Why This Project?

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- GRID aims to extend the focus to:
  - Administrative data, now available for many countries
  - The study of income dynamics (mobility, income instability, etc.) and other long-run phenomena
  - Finely-defined subpopulations (examples later)

I. Administrative Data

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- Ability to link data across various sources in some countries (income, expenditures, health, education)
- Caveat: In countries with large informal sectors (BRA, MEX, ARG), coverage limited to formal sector
  - Teams for these countries asked to validate findings using survey data; ongoing work

II. Panel Dimension

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- Panel data:
  - Allows study of several dimensions important for welfare:
    - Income Dynamics (volatility, skewness, persistence, etc.)
    - Mobility (intra- and inter-generationally)
    - Tail behavior (probability of extreme wage cuts vs. wage hikes)
    - Inequality in long-run ("permanent") income

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- In GRID, many statistics are reported for groups defined by
  - the interaction of gender x cohort x age group x "permanent" income.
  - Permanent income based on past 3-year average income. 40 quantile bins plus more at the top.

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- Emphasis on providing flexible quantile-based statistics to allow computation of alternative measures:
  - Inequality: Top shares, Gini, Standard deviation, P90-P10, etc.
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  - Skewness: 3rd centralized moment, Kelley's skewness, etc.

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  - Volatility: P90-P10 for income changes, etc.
  - Skewness: 3rd centralized moment, Kelley's skewness, etc.
- Statistics calculated for 4 different income measures: raw income, log income, residualized income, "permanent" income.

Overview of Available Statistics

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  - Measures of inequality for annual and "permanent" income
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  - Log change and arc-percent change (to allow extensive margin—zero income)
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- A quick look at the GRID website: https://data.grid-database.org

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- But most importantly:
  - Single master code to generate all statistics from very first step of cleaning raw data to the very end results.

New Insights from GRID: Inequality

Question 1: Is Income Inequality Rising Globally?

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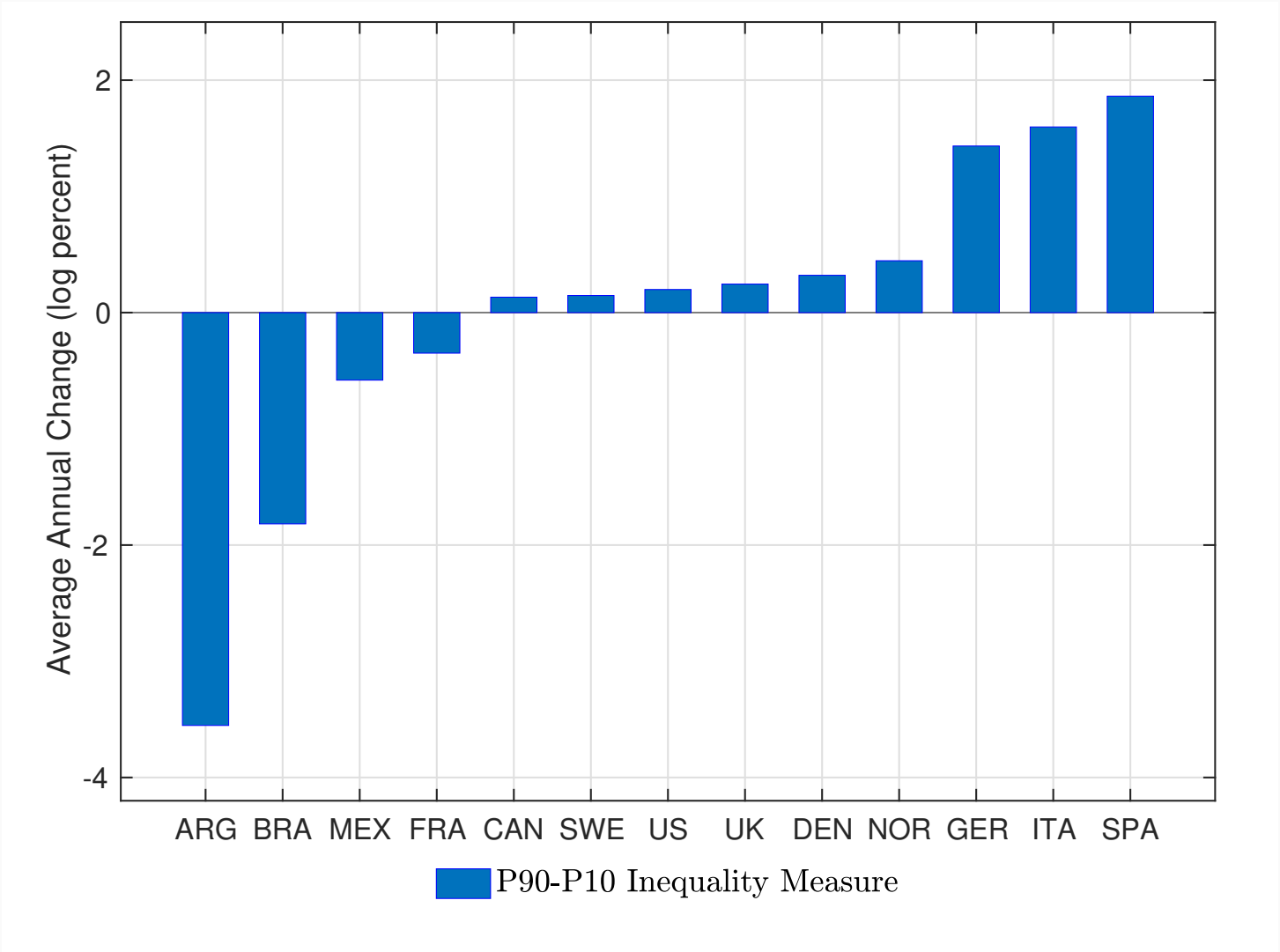
Figure 1: Trends in Overall Income Inequality for GRID Countries



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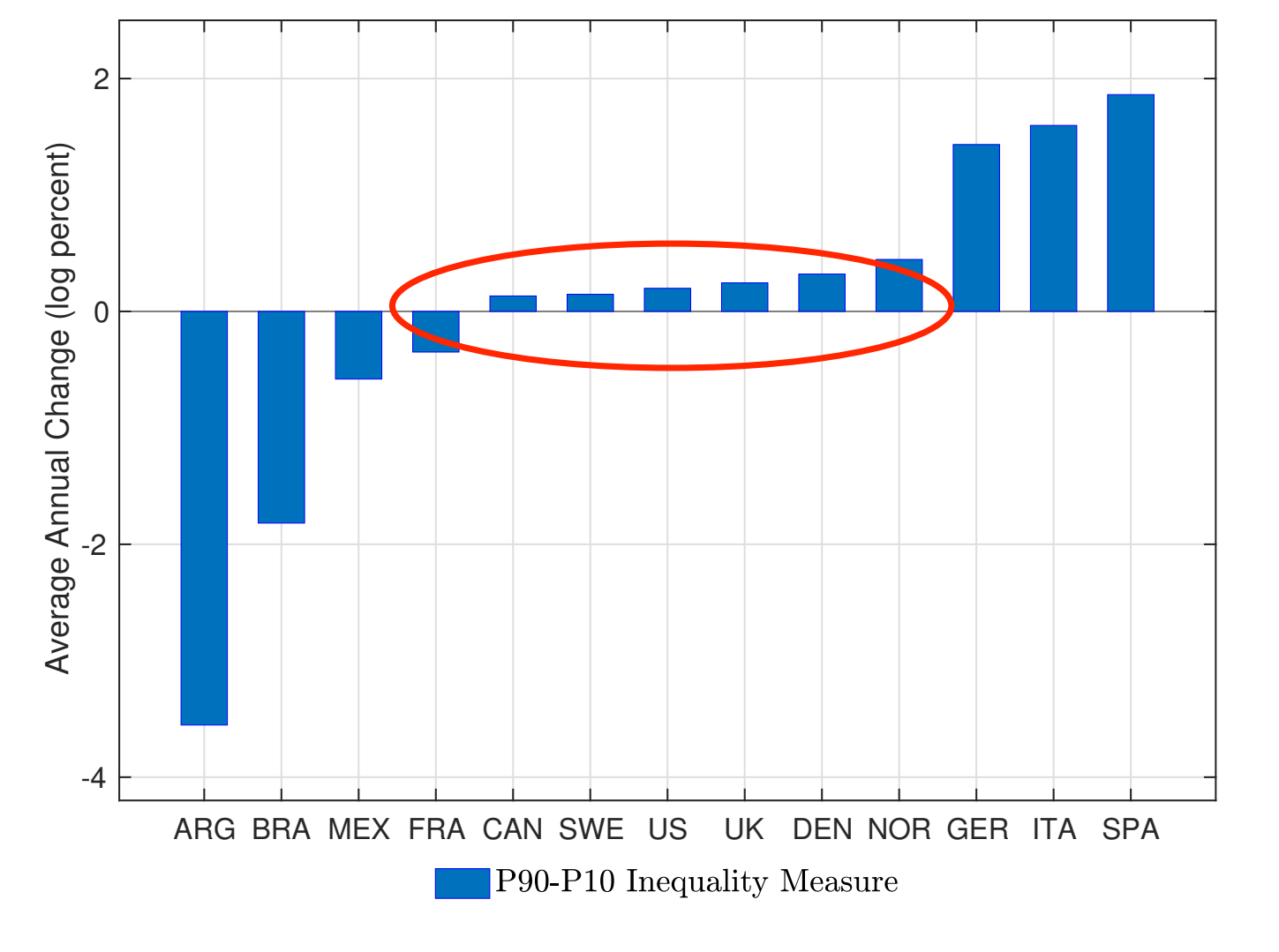

Question 2: How Much Does Average Income Grow with Age?

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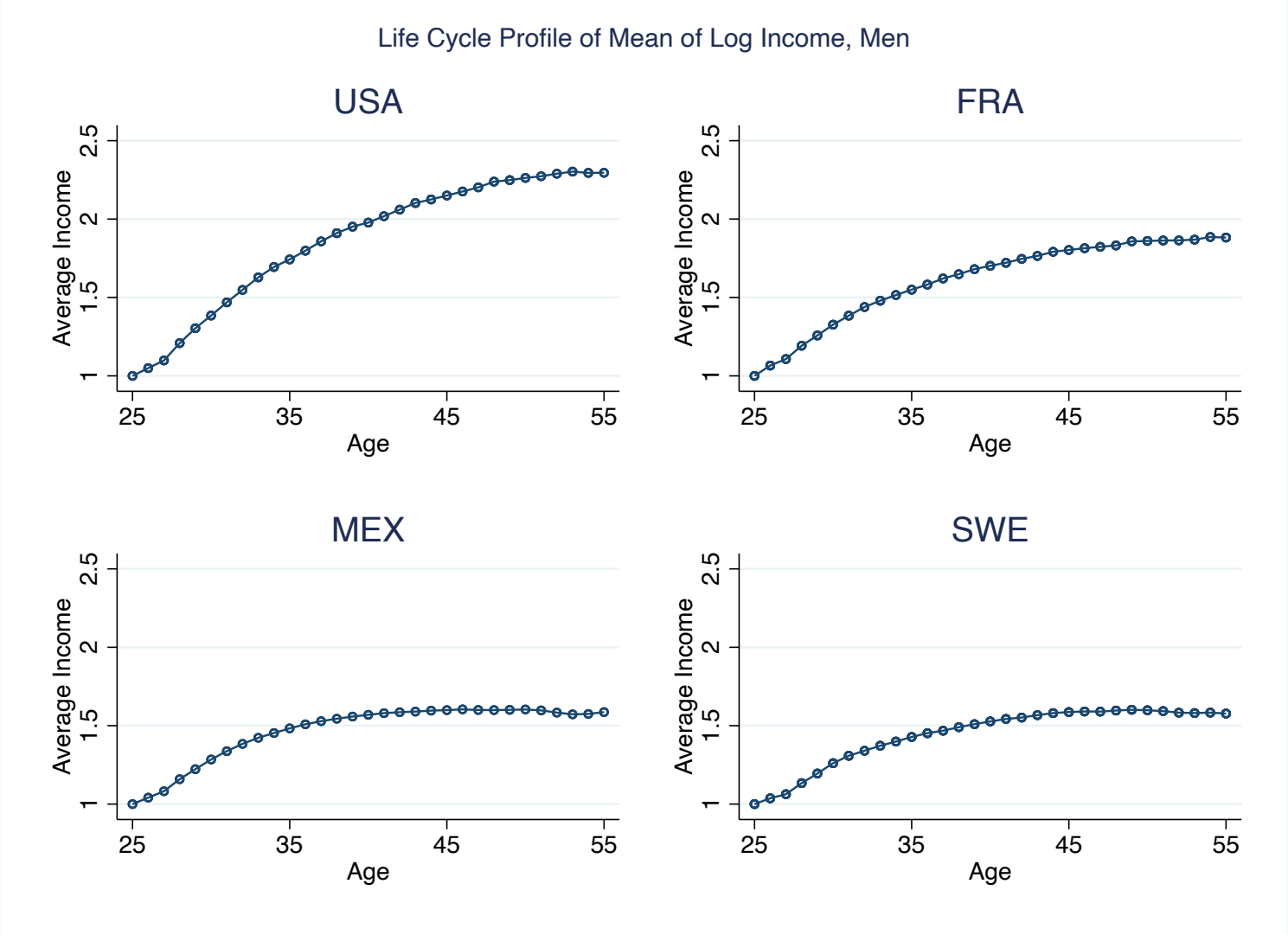
Figure 3: Average Life Cycle Profile of Income, Men



Question 3: What Fraction of Top Earners are Women?

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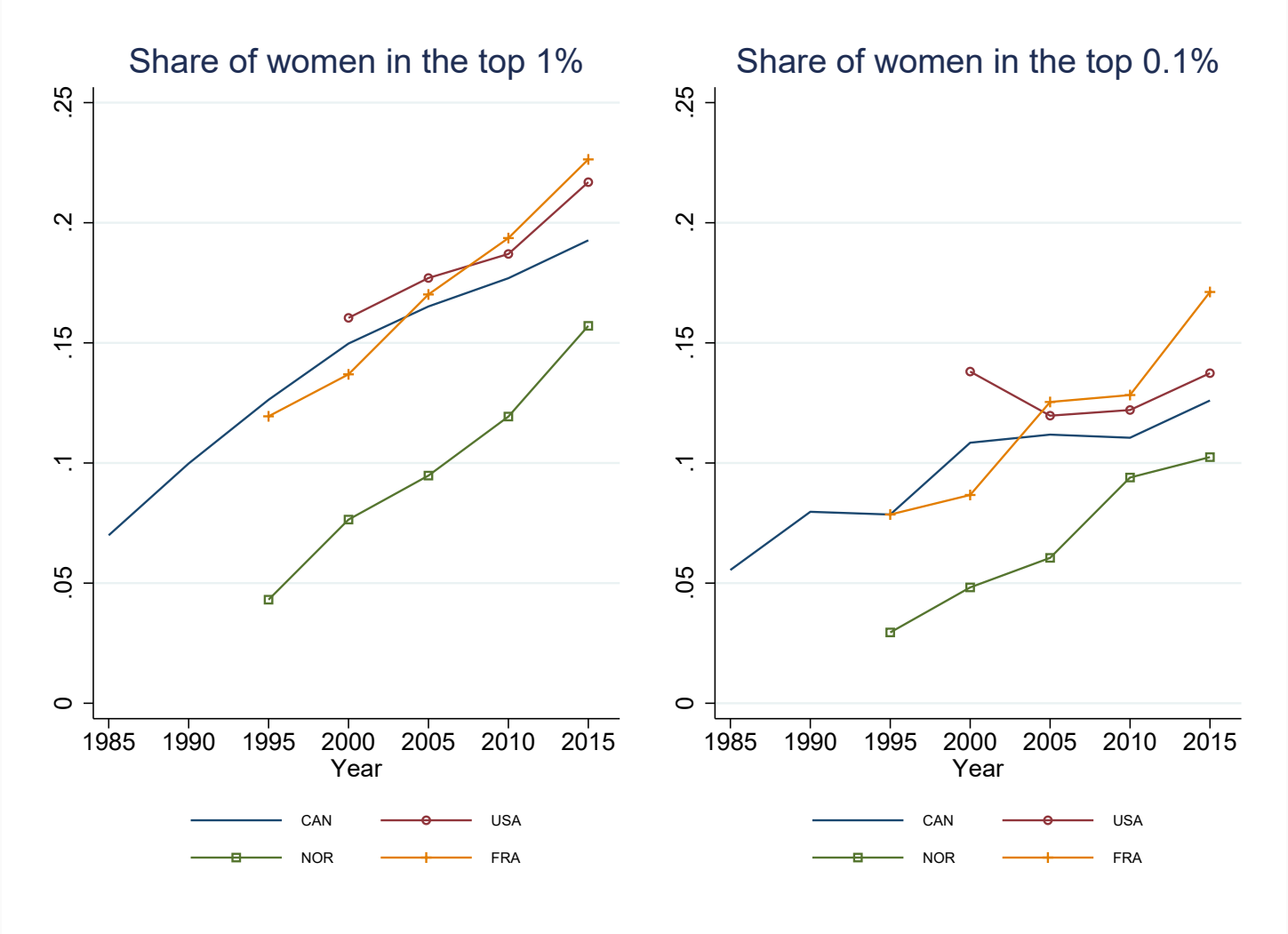

New Insights from GRID: Dynamics of Income

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- Answer crucial for many questions and policy design.

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  - Income volatility increased substantially in survey data from 1968 to 1988.
  - 30+ papers confirmed the result and extended to 2010s.

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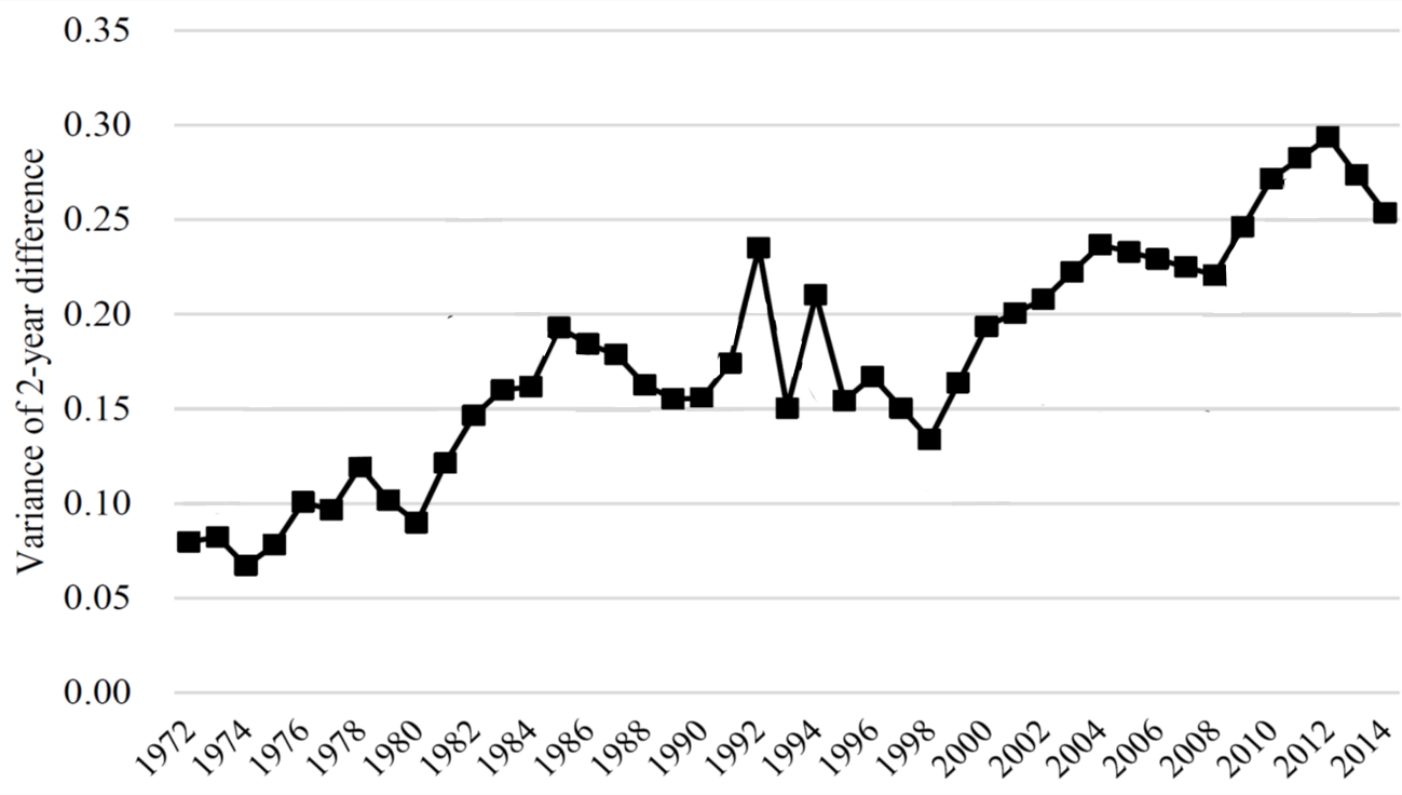
US Income Volatility in Survey Data Up

Figure 4: Variance of Income Growth (2-year)



Moffitt and Zhang (AEA P&P, 2018)

- Variance of income growth in PSID nearly tripled from 1970s to 2010s.

Has Income Instability Increased Over Time?

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- Seminal paper by Moffitt and Gottschalk (1994):
  - Income volatility increased substantially in PSID from 1968 to 1988.
  - 30+ papers confirmed the result and extended to 2010s.
- That income uncertainty is higher today has become conventional wisdom.

US Income Volatility Trending UP

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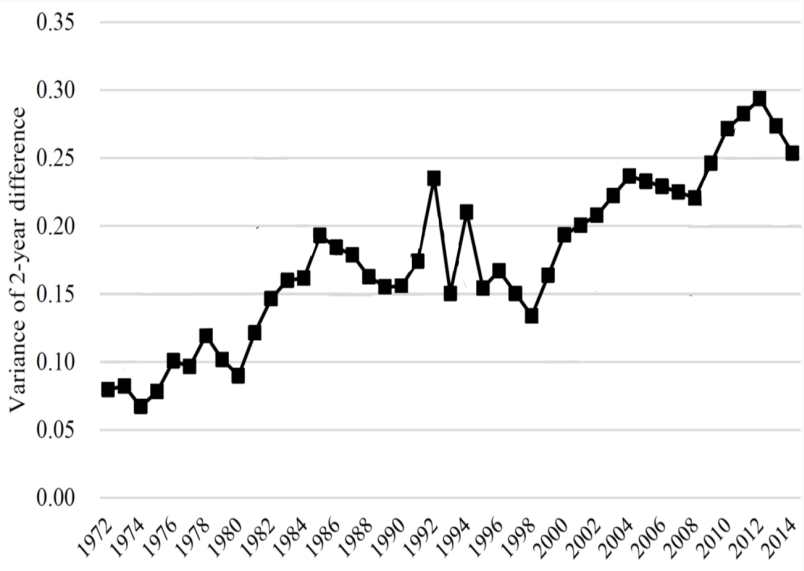

Left: Moffitt and Zhang (AEA P&P, 2018)

US Income Volatility Trending Up? or Down?

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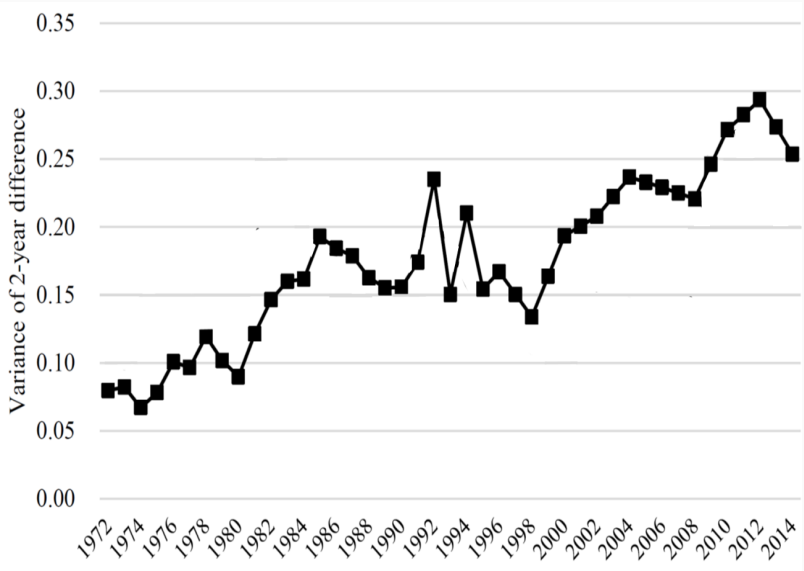
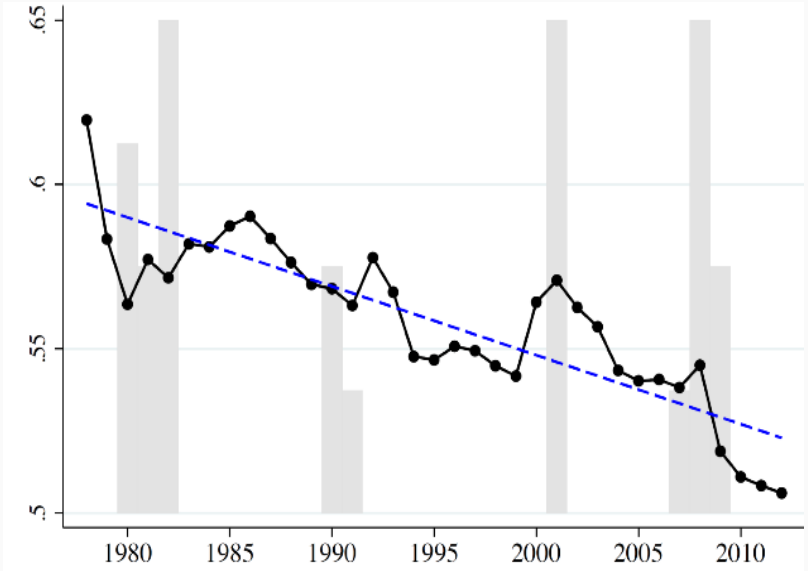


(b) Administrative (SSA Data)



Left: Moffitt and Zhang (AEA P&P, 2018)

Right: Guvenen, Ozkan, Song (JPE, 2014)

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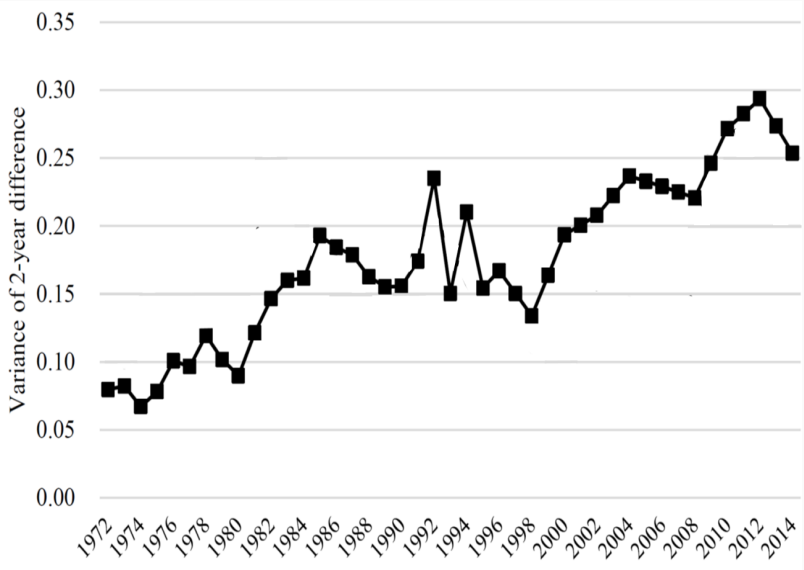
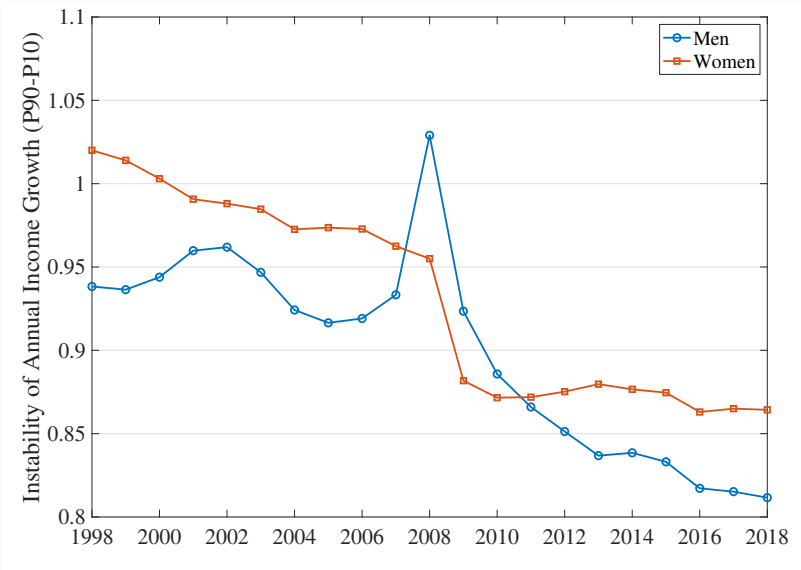


(b) LEHD Data for GRID project



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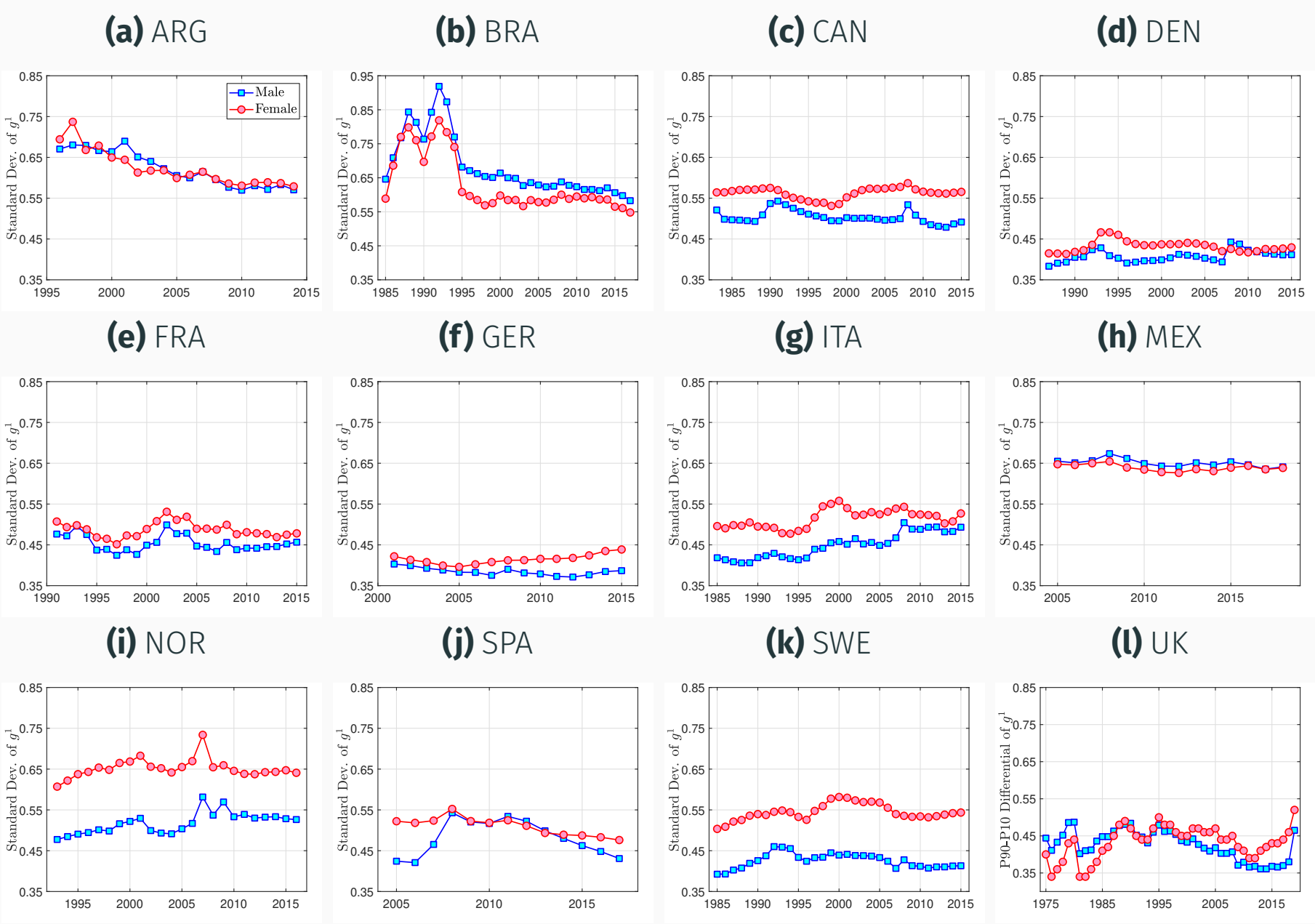

Taking Stock

- Overall, income volatility has been
  - declining in several countries (Brazil, Argentina, USA, UK after mid-1980s)
  - relatively flat in some others (Canada, Denmark, France, Germany, Mexico, Spain, Sweden), and
  - increasing in a few (men in Italy, Norway, and women in UK pre-1990s).

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- GRID contains very granular statistics that allows digging deeper into this question.

Question 5: How Does Income Volatility Vary by Income Level?

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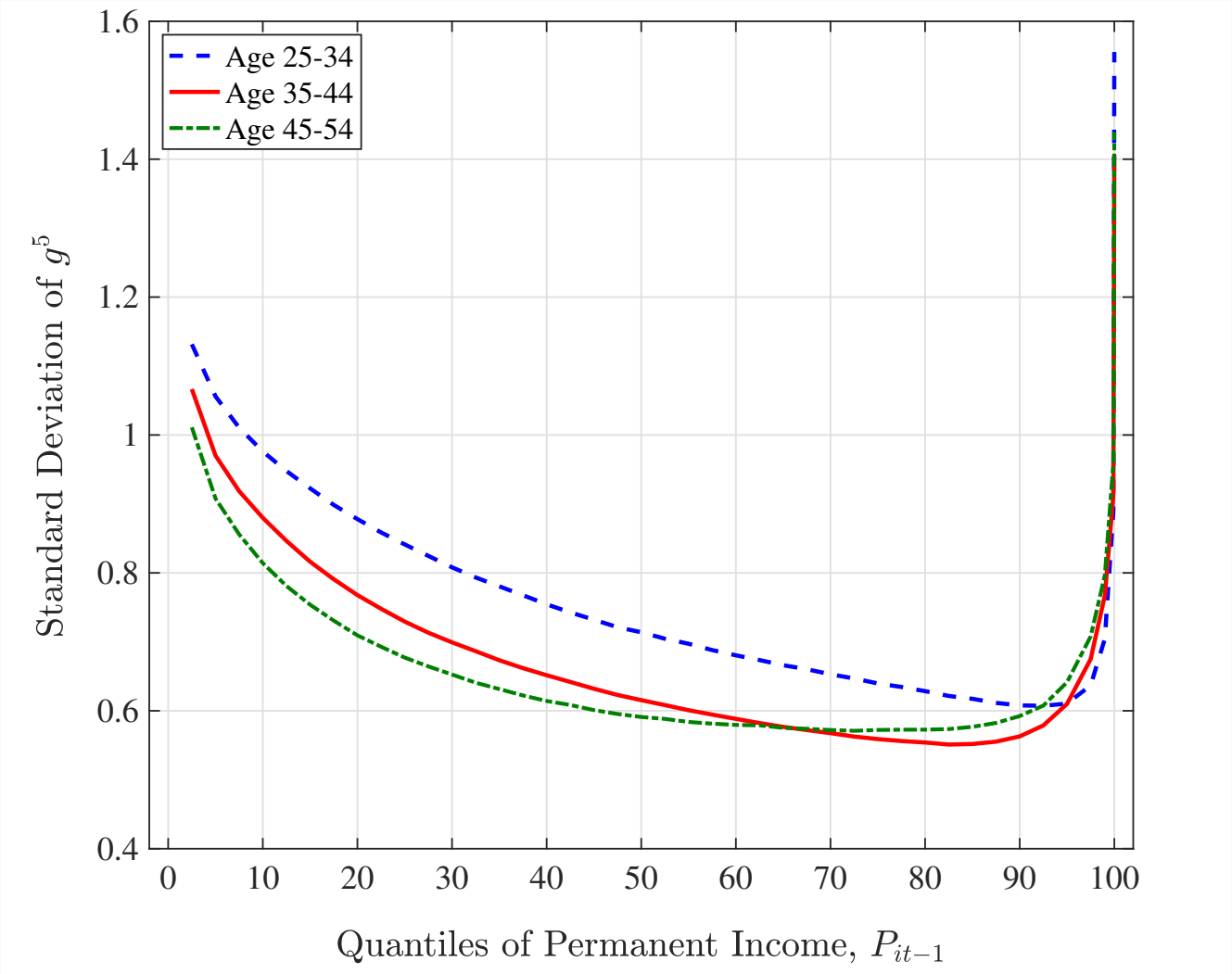
Figure 5: USA



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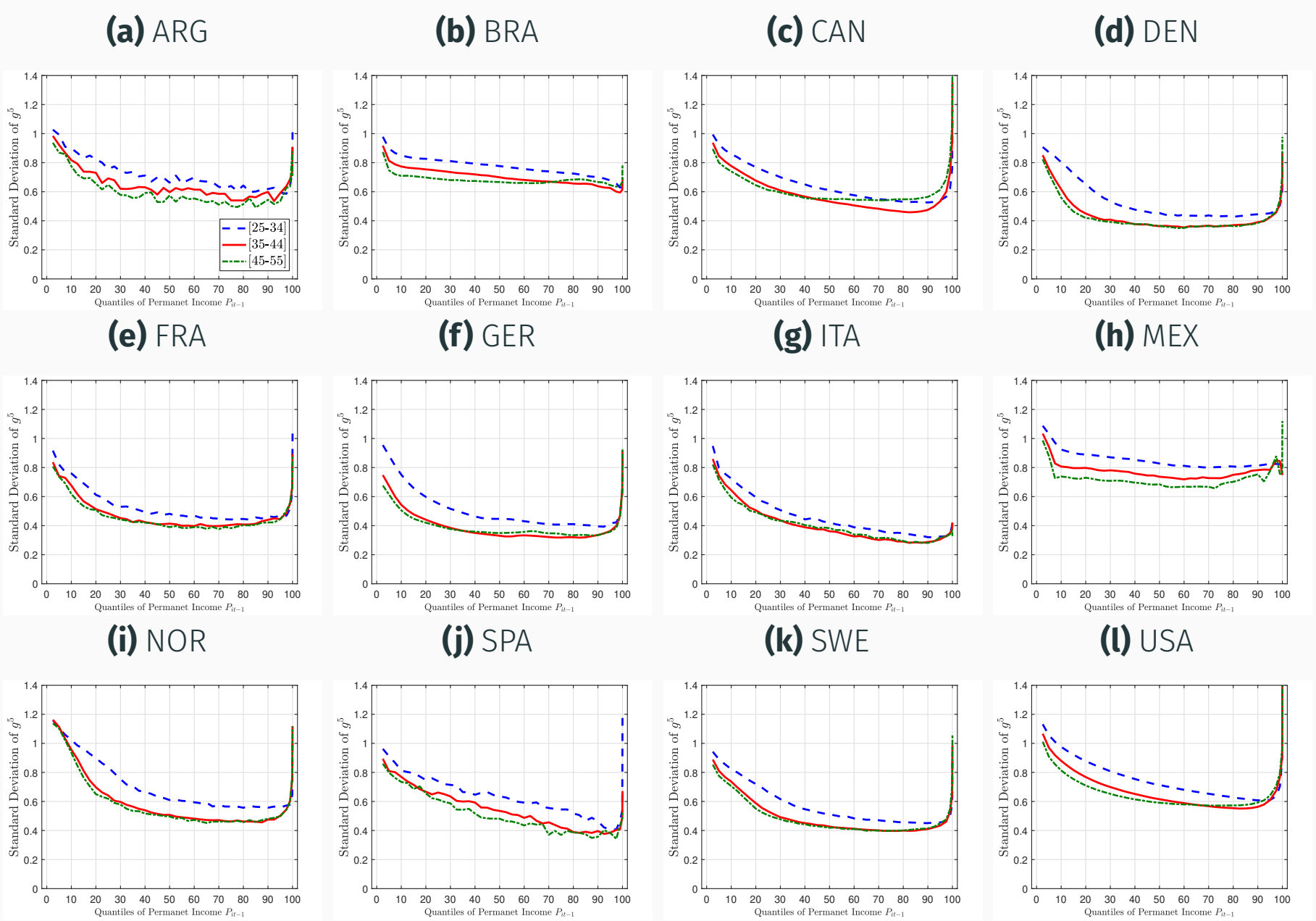

Question 6: Great Gatsby Curve

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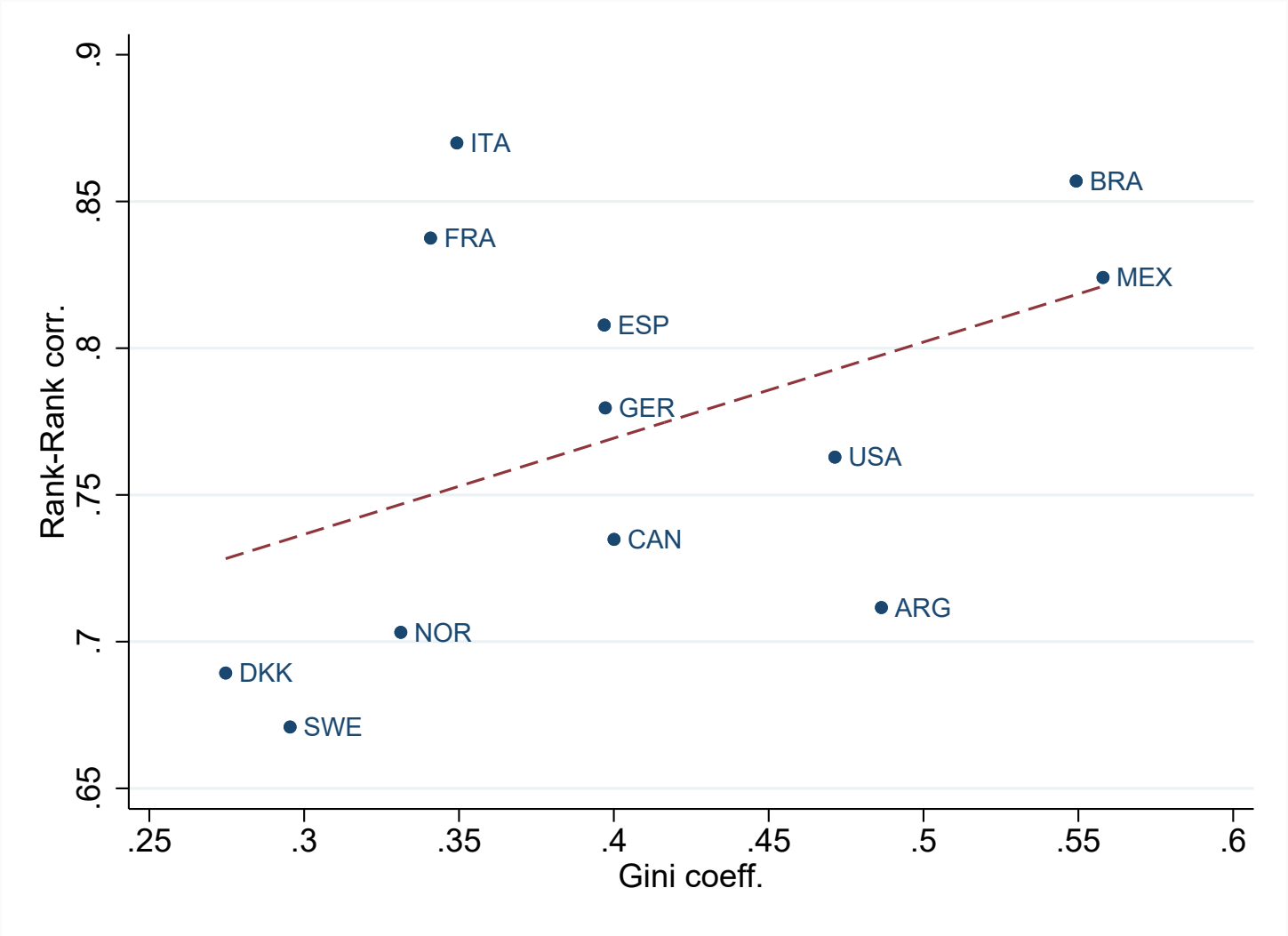

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- We have future plans to expand the set of variables included in GRID.
- We welcome all feedback and suggestions. Drop us a line at `support@grid-database.org`
- Follow us on Twitter for future updates: `@griddatabase`
- Thanks again to WCEG for giving us this opportunity to talk about GRID!

Thanks!