

Lifetime Incomes in the United States Over Six Decades

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Milton Friedman (1962)

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- **and many more..**

What Do We Know?

- ▶ Long history of studies attempting to measure lifetime incomes: **Farr (1853)**, Clark (1937), Friedman and Kuznets (1954), Nordhaus (1973), Mincer (1974), Lillard (1977), Björklund (1993), Leonesio and Del Bene (2011), Bowlus and Robin (2004), etc.

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- ▶ **But:** statistical models often fit poorly, complex long-run mobility patterns in the data, and so on.
- ▶ **This paper:** Use 60 year panel on individual earnings from SSA records.

Two Papers: 3 questions

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- ▶ Both A1 and A2 result from:
 - newer cohorts were very different from older ones when they entered
 - ∴ key open question: **what changed before age 25 for newer cohorts?**

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- ▶ **A3: A lot!** $P90/P10 \approx 20$
 - N.B. Standard calibrations of lifecycle models imply $P90/P10 \approx 5 - 7$.

Plan of the Talk

- ▶ Data sources
- ▶ Trends in median lifetime incomes
- ▶ Trends in lifecycle profiles by cohort
- ▶ Trends in lifetime income inequality
- ▶ Time permitting: Linking to *declining* volatility in income shocks.
- ▶ Current and future work

THE DATA

The Data Sets

- ▶ **US Continuous Work History Subsample (CWHS):**
 - Research extract from SSA's Master Earnings File
 - 1% nationally representative panel from [1957 to 2013](#) (57 years):
 - Wage/Salary Income. (No self-employment income before 1978.)
 - Imputed above SSA taxable limit 1957–1977. No topcoding afterward.
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- ▶ **Price deflator:** **PCE (baseline)**, **CPI (alternative)**

Variable Definitions

- ▶ Y_t^i : Inflation-adjusted (real) annual income of individual i .
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- ▶ **Baseline sample**: All individuals who
 - are in labor market for 15+ years: i.e., $Y_t^i \geq Y_{\min} = \$1650$ in 2012 dollars.
 - $\bar{Y}^i \geq Y_{\min} \times 31 = \$51,150$ and
 - survive to age 55.

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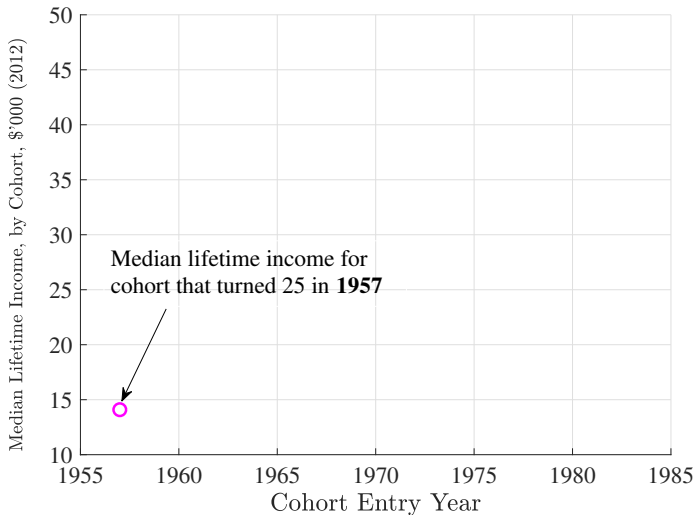
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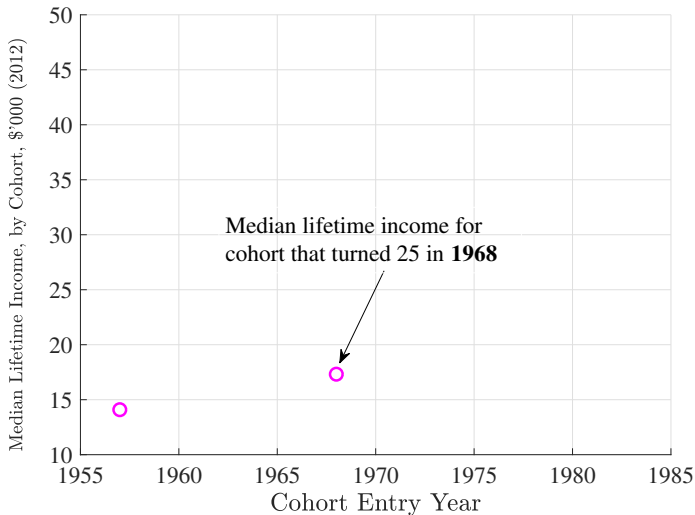
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 - $\bar{Y}^i \geq Y_{\min} \times 31 = \$51,150$ and
 - survive to age 55.
- ▶ **Inflation adjustment:**
 - **Baseline:** adjust with PCE index
 - Also report: adjustment with CPI index.

Empirical Findings

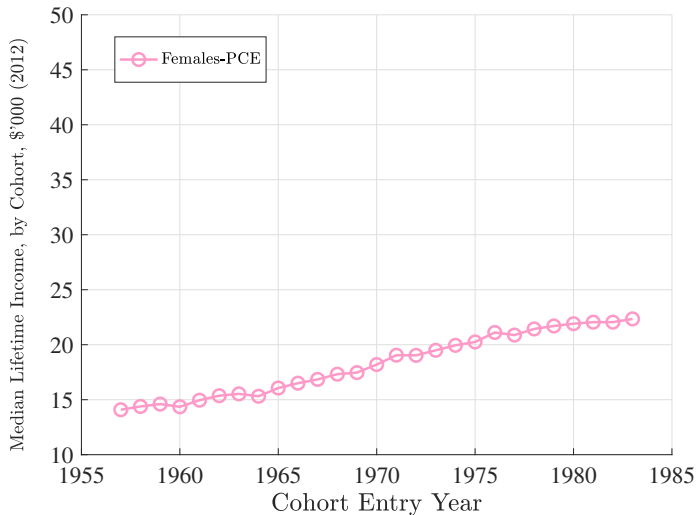
Median Lifetime Income, By Cohort, **Women**



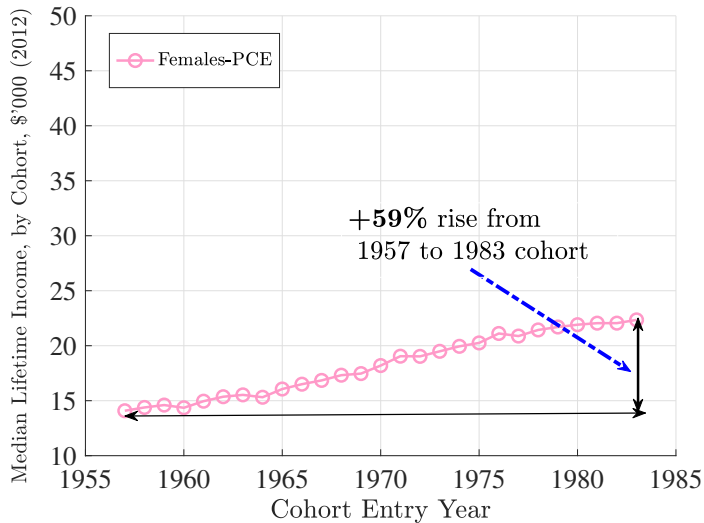
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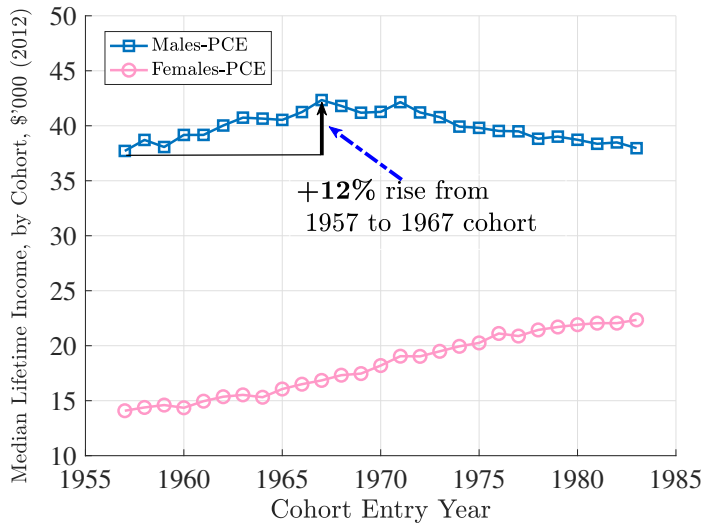
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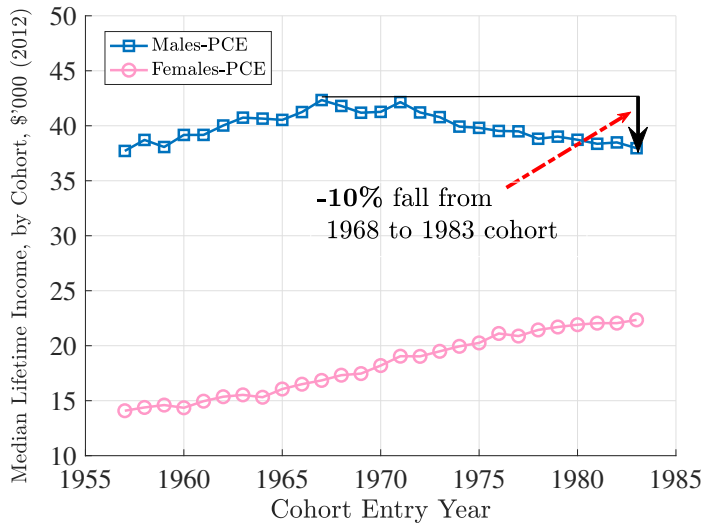
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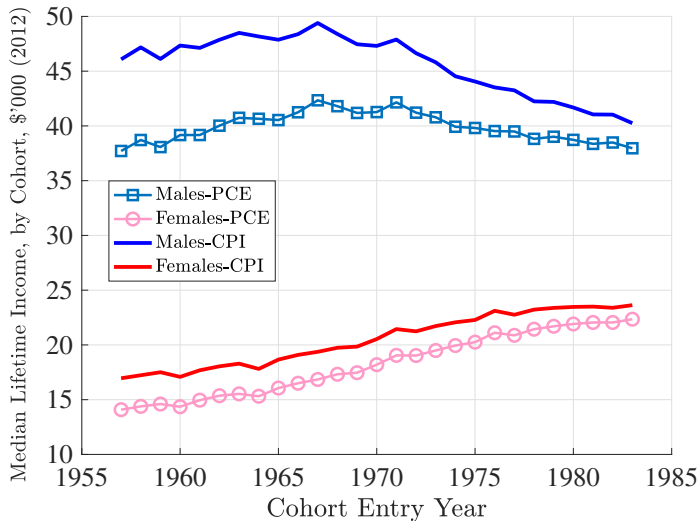
Median Lifetime Income, By Cohort, Men



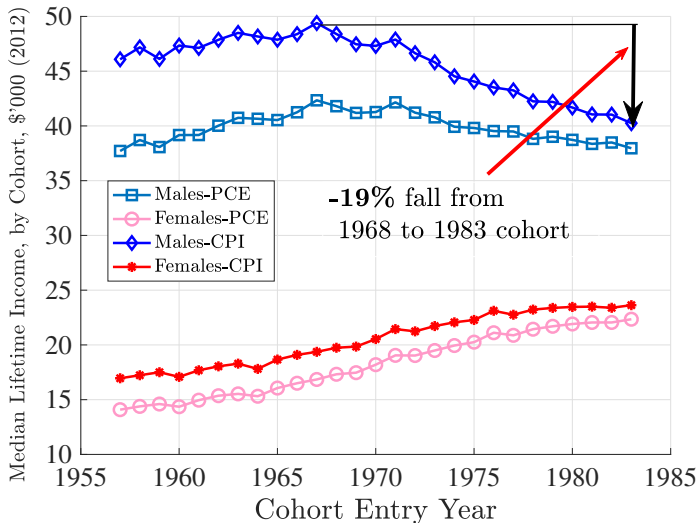
Median Lifetime Income, By Cohort, Men



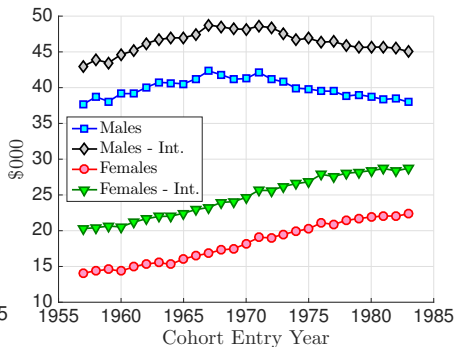
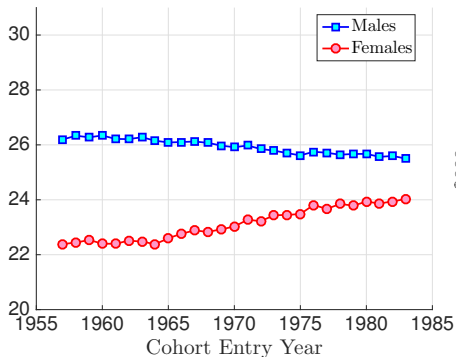
Median Lifetime Income, By Cohort, **CPI**



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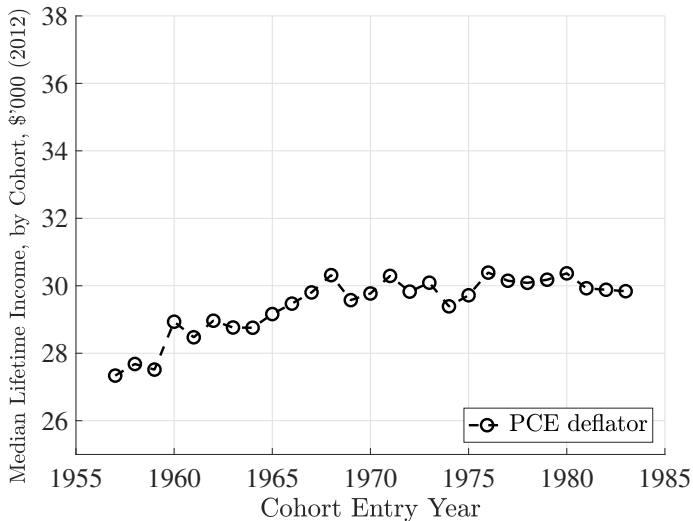


All About Women Joining the Labor Force?

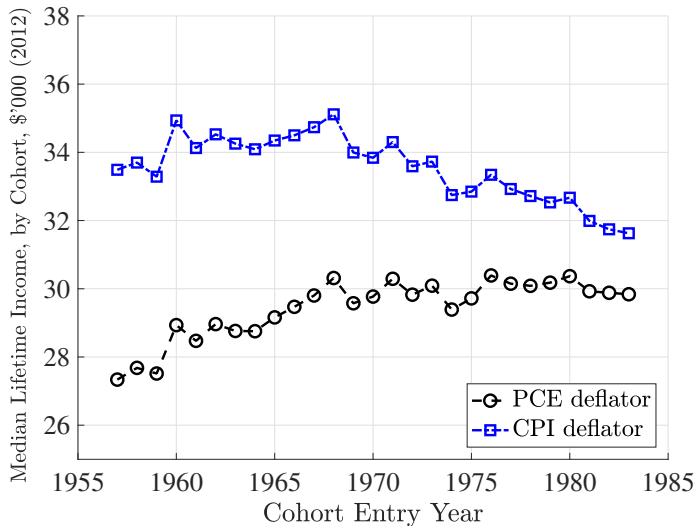


(a) Years worked by cohort and gender (b) Median lifetime income, ext. vs intens. margins

Median Lifetime Income, All Individuals



Median Lifetime Income, All Individuals, CPI



More Percentiles

Cohorts	Averages		Percentiles						
	Mean	Median	p10	p25	p75	p80	p90	p95	p99
PCE									
57 to 68	17.56	10.90	.	.	.	.	.	.	.
68 to 83	6.84	-1.57	.	.	.	.	.	.	.
Cumulative	25.60	9.15
CPI									
57 to 68	11.09	4.86
68 to 83	-1.95	-9.93
Cumulative	8.92	-5.56

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PCE									
57 to 68	17.56	10.90	13.21	11.67	11.34	11.71	15.75	20.03	45.02
68 to 83	6.84	-1.57	2.44	0.75	-0.51	1.79	10.14	15.28	15.93
Total	25.60	9.15	15.98	12.51	10.76	13.71	27.49	38.37	68.12
CPI									
57 to 68	11.09	4.86	7.41	5.56	5.40	5.99	9.22	13.08	35.33
68 to 83	-1.95	-9.93	-5.25	-7.14	-9.01	-7.08	1.16	6.20	7.38
Total	8.92	-5.56	1.77	-1.98	-4.10	-1.52	10.49	20.10	45.32

All About the 2000's?

- ▶ The decline in median incomes start with the 1968-69 cohort.

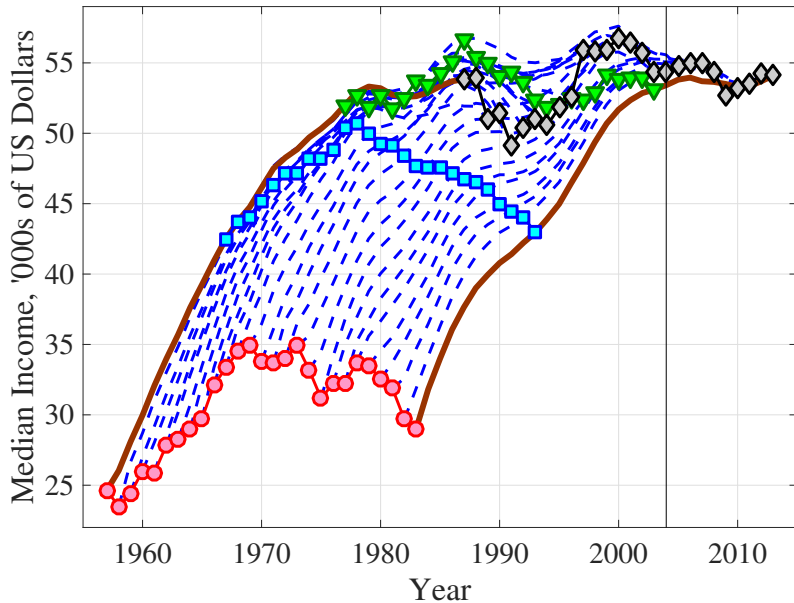
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- ▶ The decline in median incomes start with the 1968-69 cohort.
- ▶ Cohorts entering after 1970 have:
 - spent more and more years during the anemic growth decade of 2000s, and
 - latter ones experienced the Great Recession.

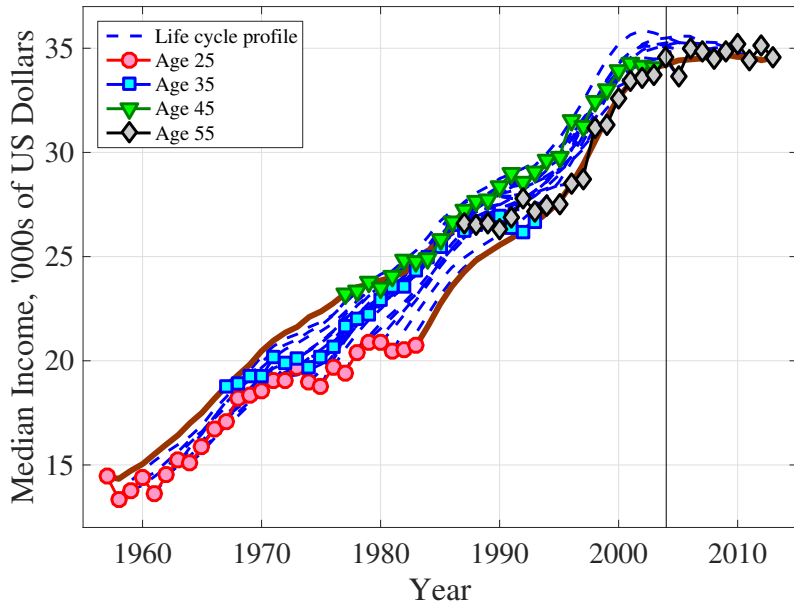
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 - latter ones experienced the Great Recession.
- ▶ So, is the decline all about the 2000s?

Median Life Cycle Income Profiles

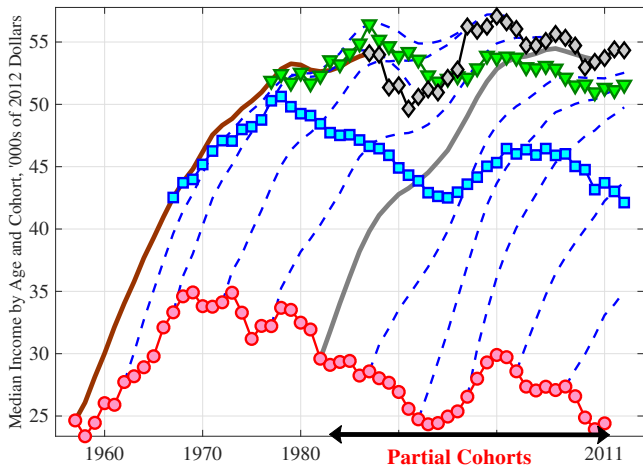


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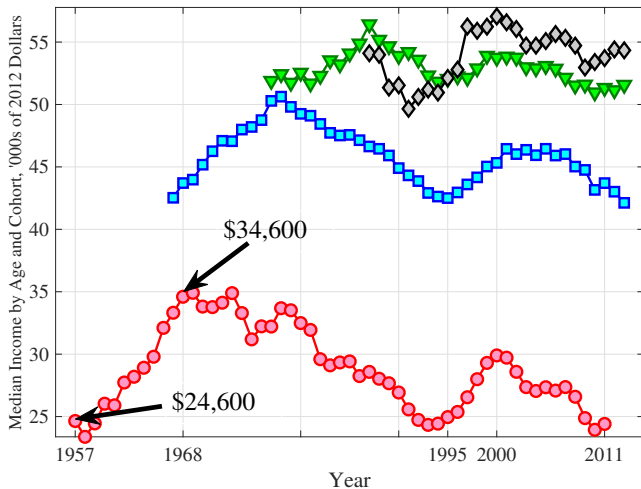


How Do More Recent Cohorts Look Like?

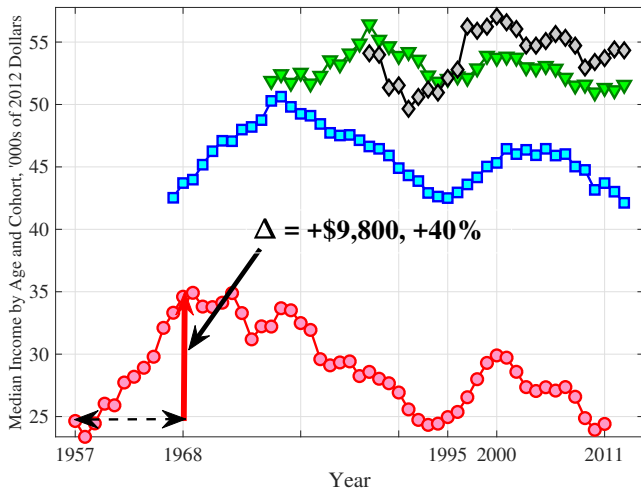
Life Cycle Profiles, Men, Partial Cohorts



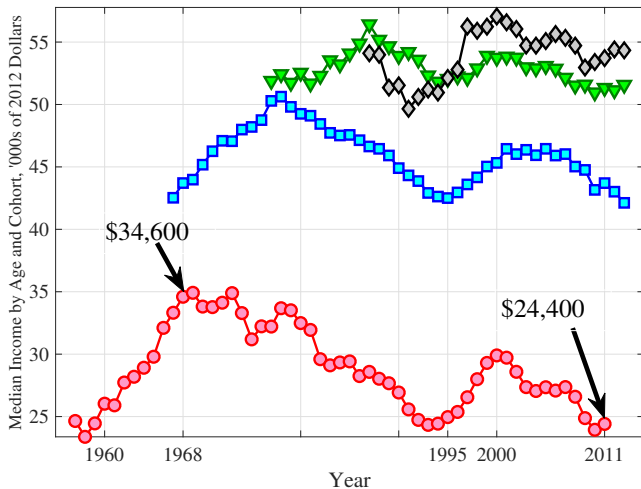
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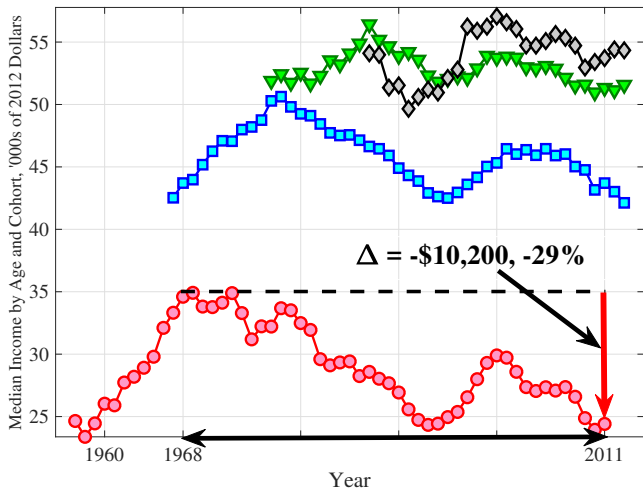
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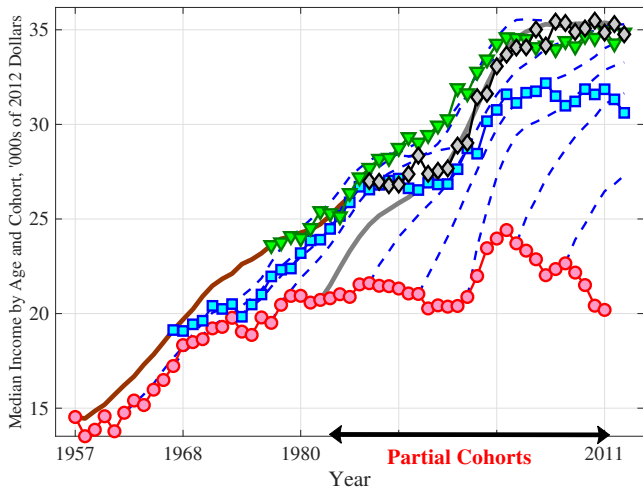


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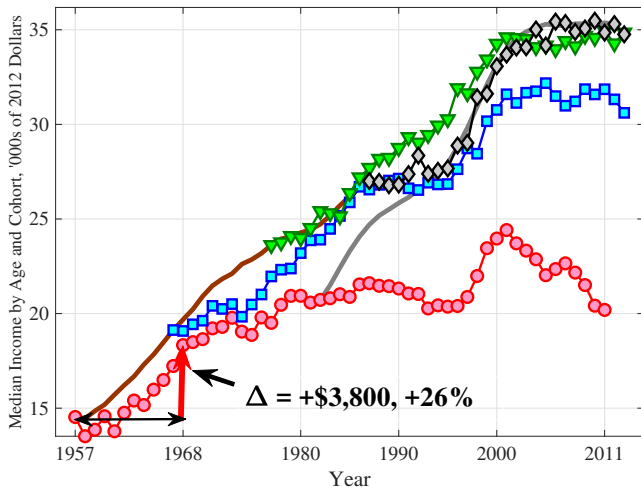


MALES. Real GDP/capita: Up **3X**. Real wages/worker: Up **1.8X**.

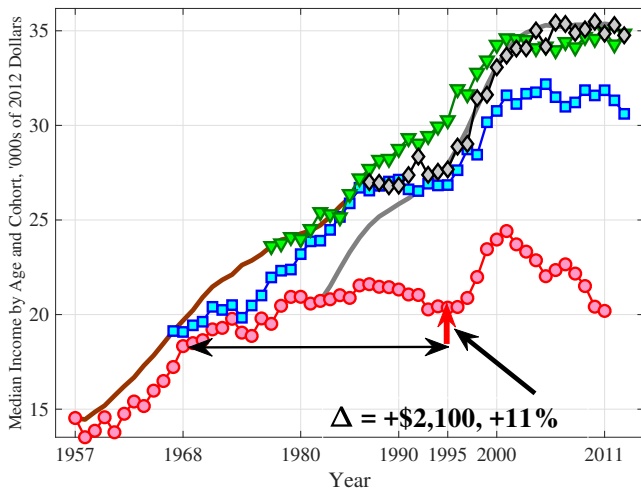
Life Cycle Profiles, **Women**, Partial Cohorts



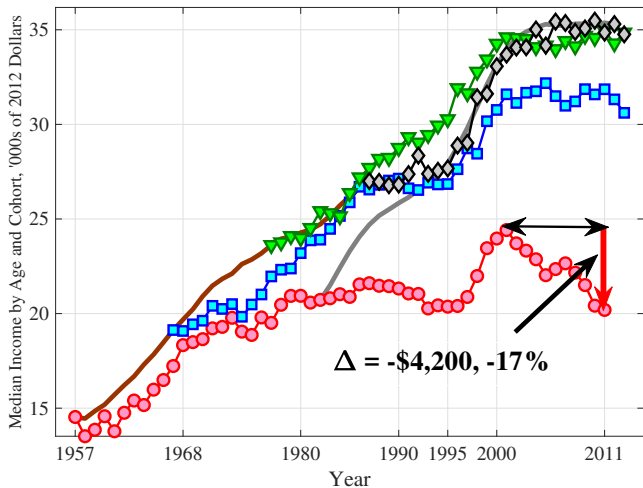
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- ▶ Using aggregate data from NIPAs, we can compute **(mean) non-wage benefits per worker**
- ▶ Add the mean benefits to median lifetime income to get an upper bound.

Non-Wage Compensation: Annualized Lifetime Values

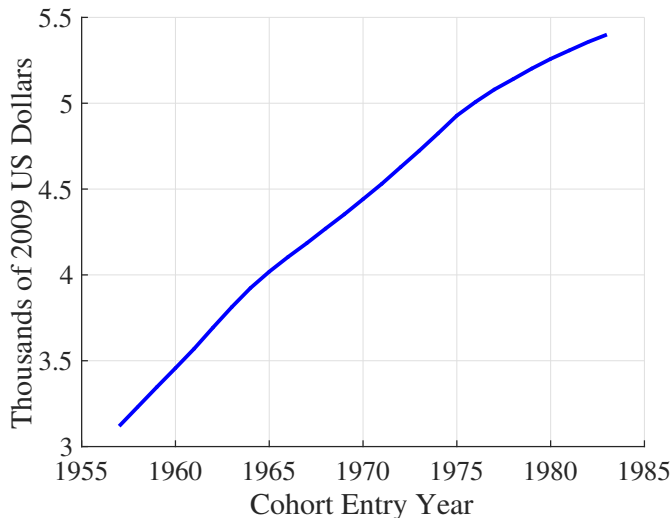


Figure: Real employer contributions to pension and group health insurance per worker, private industries

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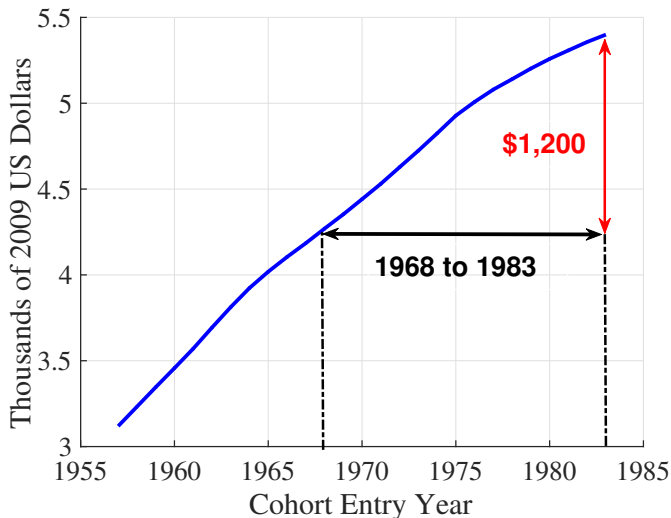


Figure: Real employer contributions to pension and group health insurance per worker, private industries
Guvenen, Kaplan, Song, Weidner

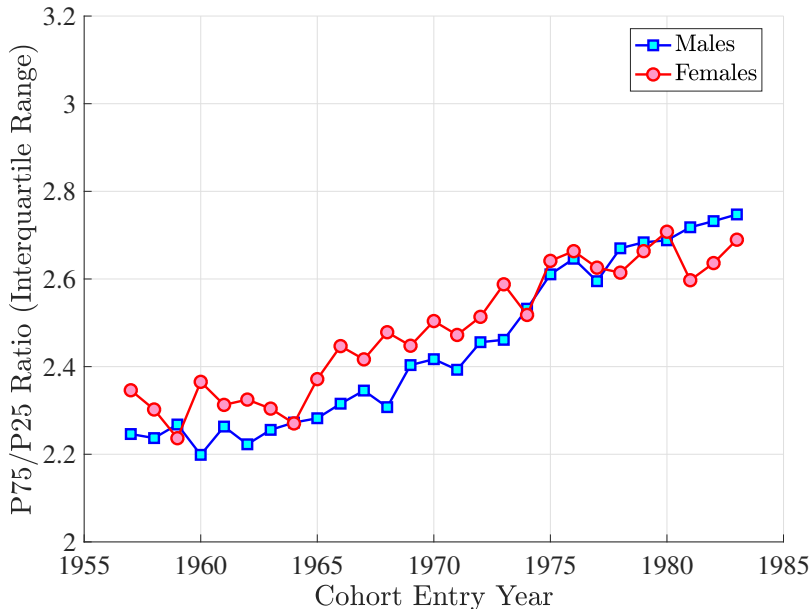
Adding in Health Care and Pension Benefits

From the 1968 cohort to 1983 cohort:

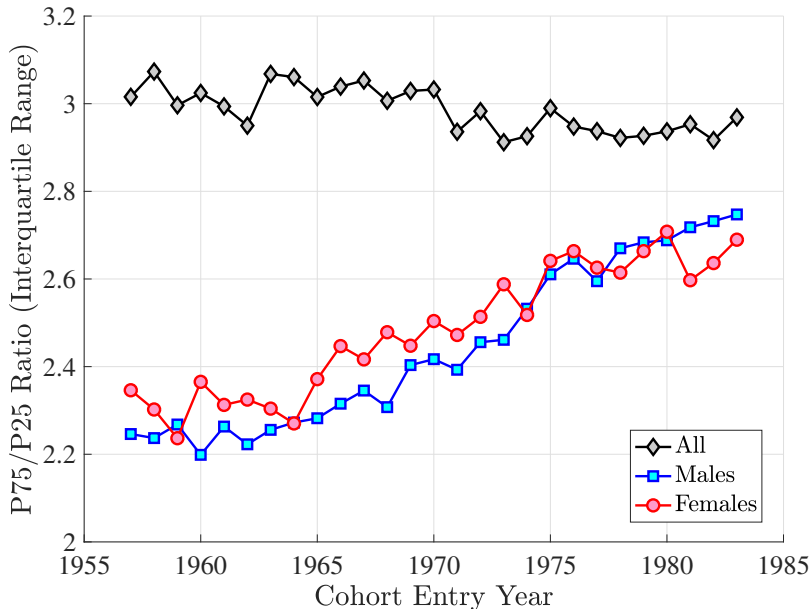
- ▶ Add this \$1,200 in higher benefits, **median male worker's lifetime income still fell by**
 - **PCE**: $\$4,300 - \$1,200 = \$3,100$ per year or **\$96,100** over life cycle.
 - **CPI**: $\$9,050 - \$1,200 = \$7,850$ per year or **\$243,350** over life cycle.

3. Evolution of Inequality Over Time

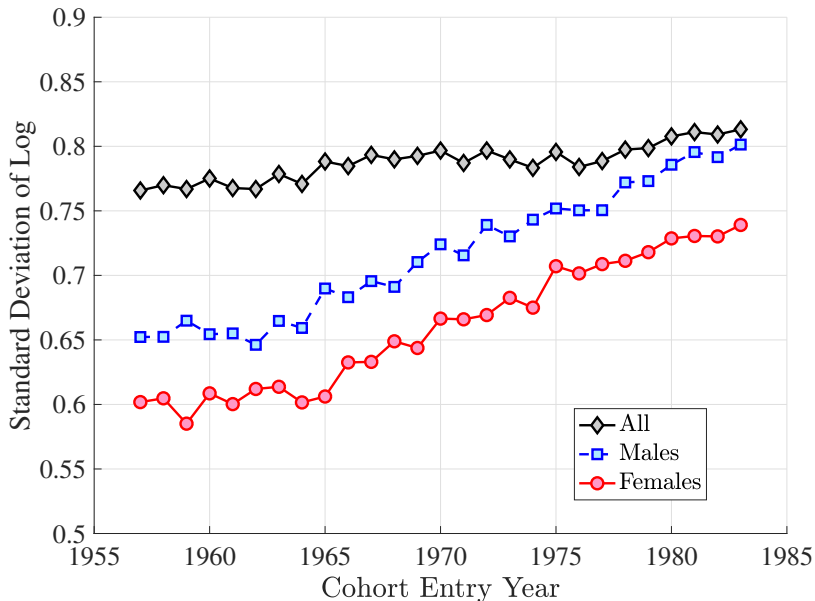
Lifetime Inequality: P75-P25 (IQR)

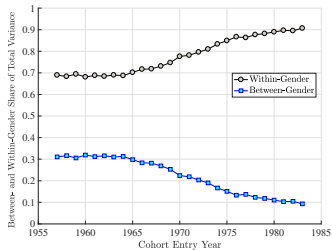
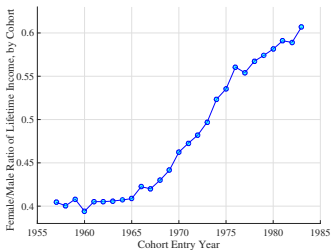


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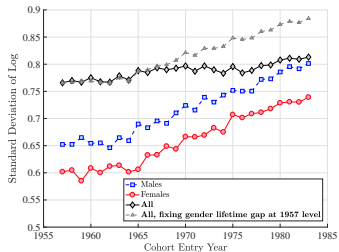


Lifetime Inequality By Cohort: Std. Dev.



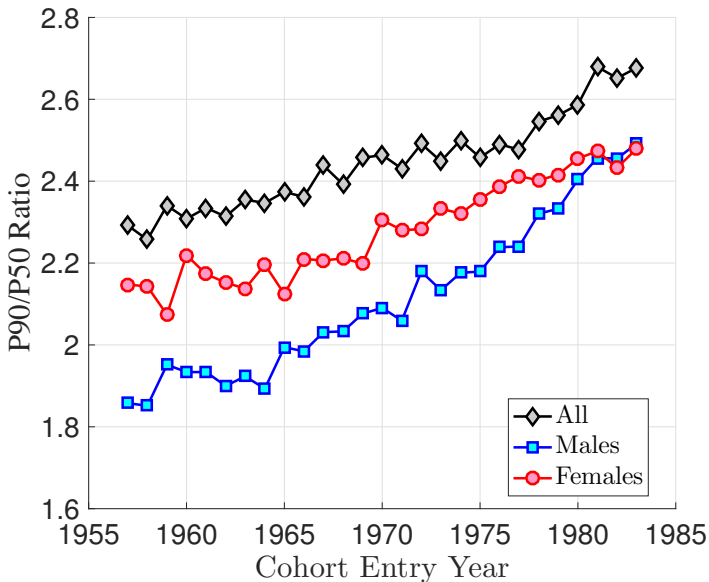


(a) Gender Lifetime Income Ratio (b) Between- vs. Within- Var. Share

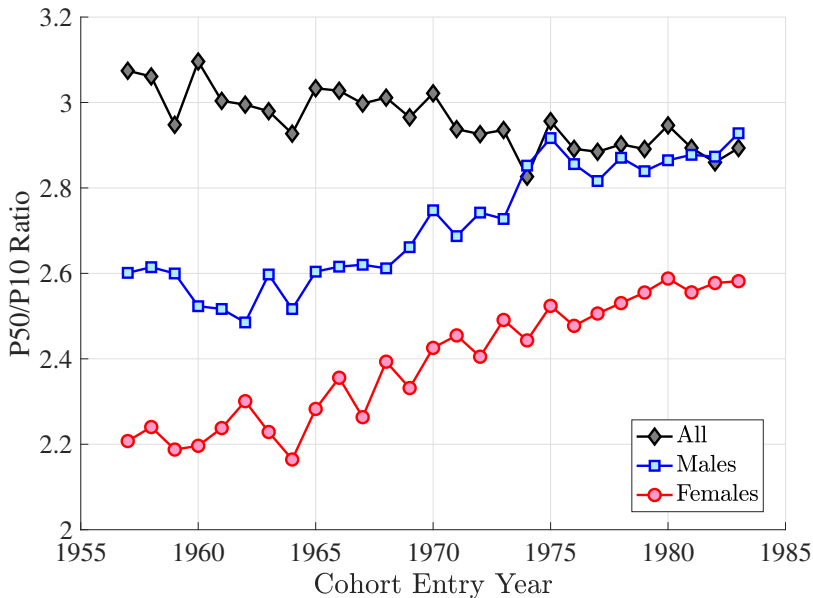


(c) Std. Dev. of Logs

Lifetime Inequality By Cohort: P90-50

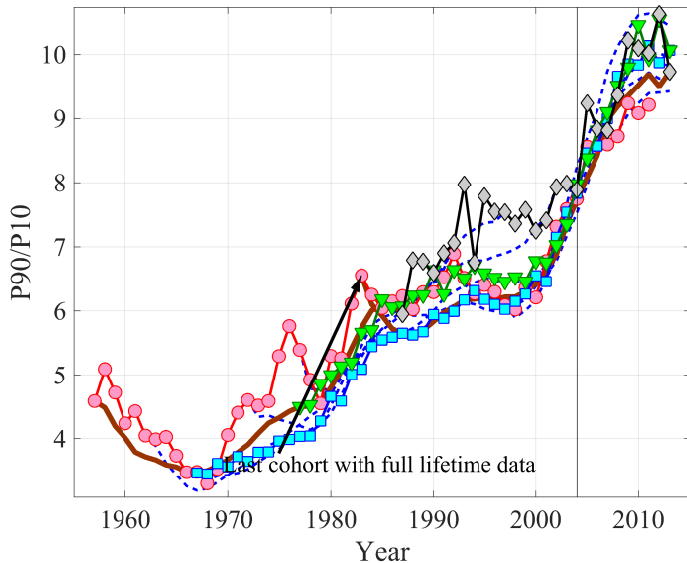


Lifetime Inequality By Cohort: P50-10

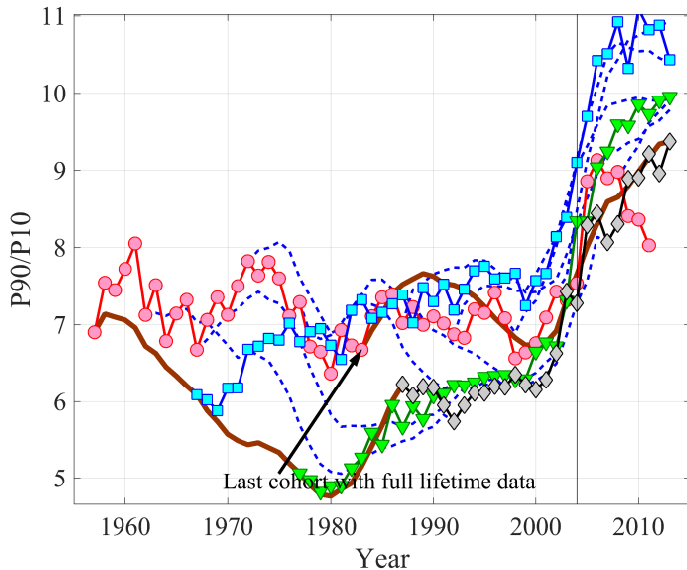


Life Cycle Profiles of Inequality

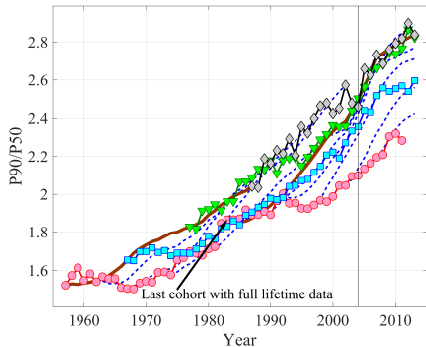
Males, Life Cycle of Inequality, P90-P10



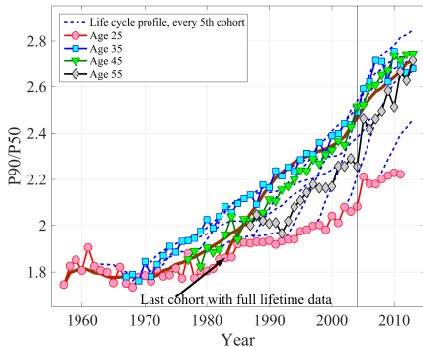
Females, Life Cycle of Inequality, P90-10



Life Cycle of Inequality, P90-50

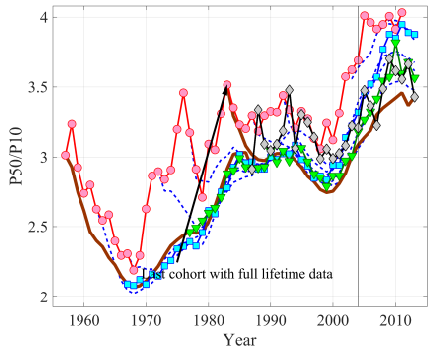


(d) P90-50 of logs, Men

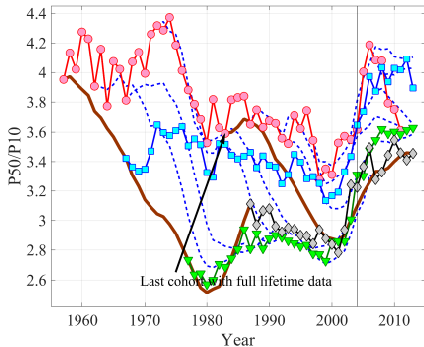


(e) P90-50 of logs, Women

Life Cycle of Inequality, P50-10



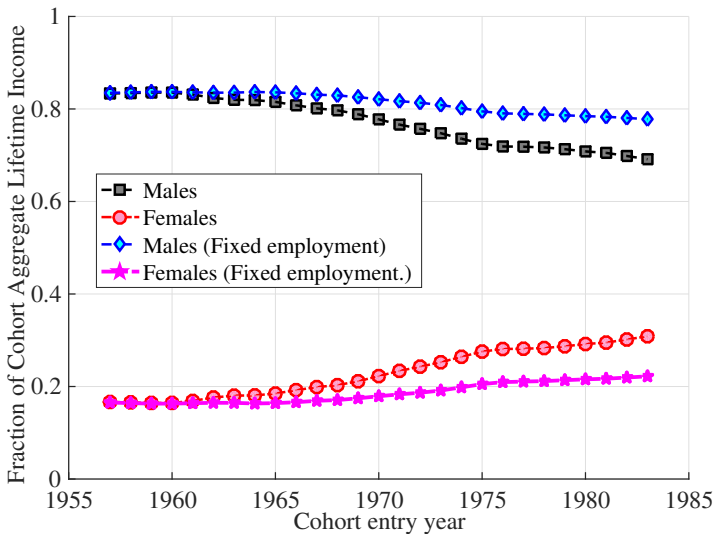
(f) P50-10 of logs, Men

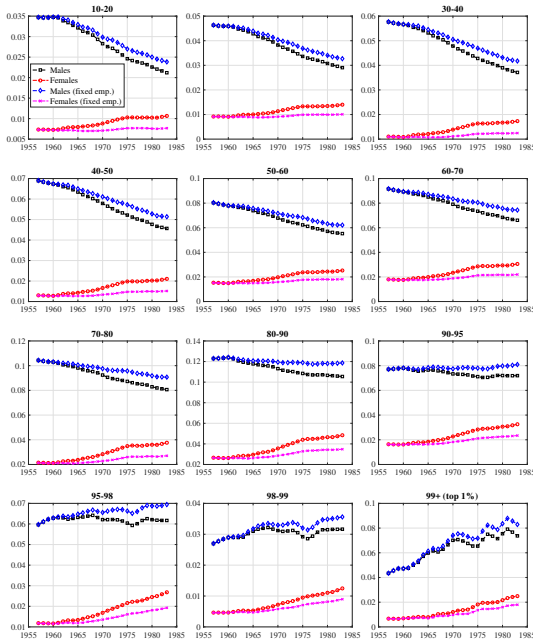


(g) P50-10 of logs, Women

Shares of the Pie

Share of Cohort Total Income By Gender Group





Rising Inequality...
Falling Volatility?

Income Shock Volatility Rising or Falling?

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- ▶ Opening quote from Ljunqvist and Sargent (2008, ECMA):

“A growing body of evidence points to the fact that the world economy is more variable and less predictable than it was 30 years ago...[There is] more variability and unpredictability in economic life”

Heckman (2003)

Income Shock Volatility Rising or Falling?

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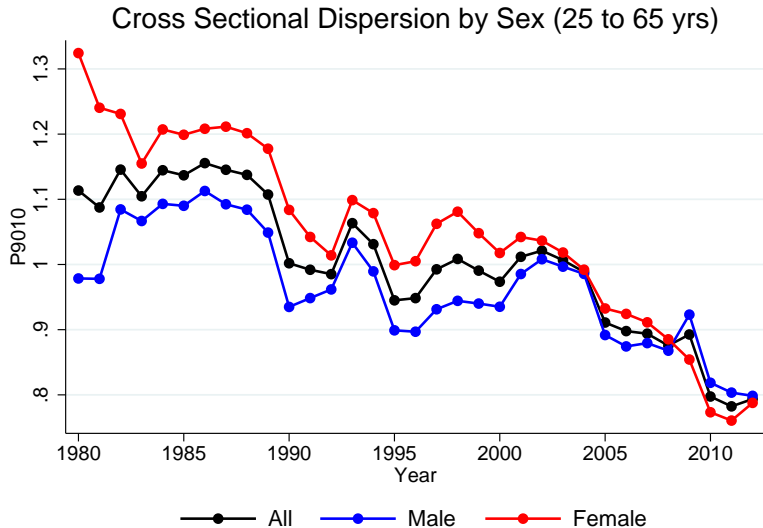
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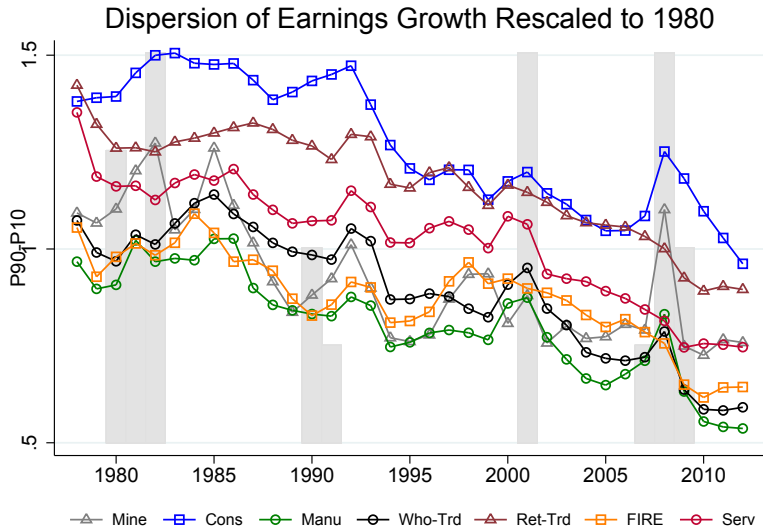
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- ▶ We study this in an ongoing project: **“The Great Micro Moderation”**
 - Bloom-Guvenen-Pistaferri-Sabelhaus-Salgado-Song-2017

The Great “Micro” Moderation



Holds in Every Major Industry



Q: How Can Volatility Go \downarrow and Inequality Go \uparrow ?

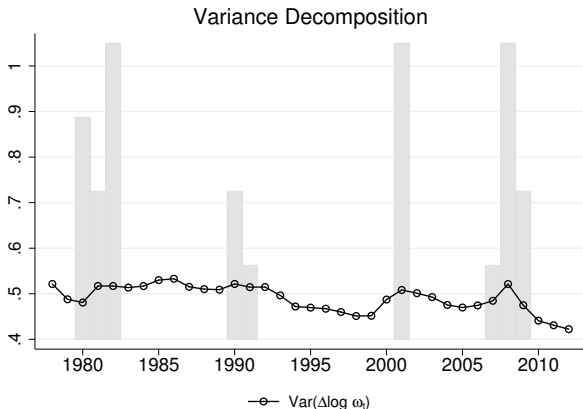
Identity:
$$\underbrace{\text{var}(\Delta w_t^i)}_{\text{volatility}} \equiv \underbrace{\text{var}(w_t^i) + \text{var}(w_{t-1}^i)}_{\approx 2 \times \text{inequality}} - \underbrace{2 \times \text{cov}(w_t^i, w_{t-1}^i)}_{\text{persistence}}$$

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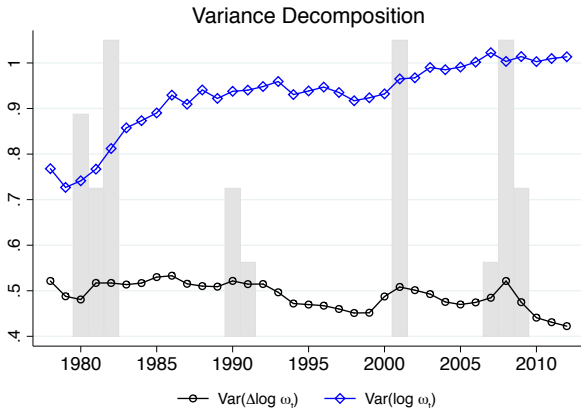
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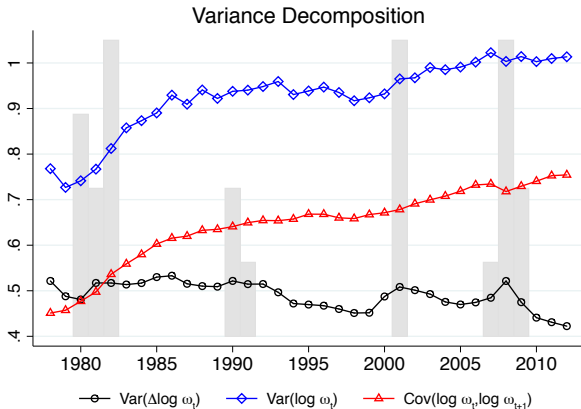
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What is Driving Persistence Up?

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 2. We found above that $\text{var}(\alpha^{i,c})$ is higher for newer cohorts.

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2. **Three-quarters** of lifetime income percentiles **displayed no growth** from 1968 to 1983 cohort.
3. Rise of lifetime inequality in the population has been very much muted—thanks to shrinking gender wage gap.
4. A large part of both:
 - decline in median lifetime incomes for men
 - and rise in lifetime inequality within gender groups starts at age 25 for newer cohorts.

Thanks!