

Early-Career Job Instability and Life-Cycle Income Dynamics

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Motivation

- | Labor markets: more unstable for young workers in the last decades
 - | Era of “job for life” era replaced by era of the gig economy
- | **What are the life-cycle consequences of early-career job instability?**
 - | We know: instability in early years ! lower *levels* of future earnings (von Wachter '20).
 - | Open question: Whether and how it affects the life-cycle of earnings *uncertainty*
- | Important as earnings uncertainty can affect other *macro outcomes*
 - | consumption patterns (Meghir and Pistaferri, 2011; De Nardi et al., 2019), timing of fertility (Sommer, 2016; Guner et al., 2021), housing (Paz-Pardo, 2022)
- | **This paper:** how early instability in the labor market shape the size and nature of earnings uncertainty & life-cycle profile

Bridge two literatures

- | Lit. on earnings uncertainty & macro outcomes ! ignore initial career
 - | Meghir and Pistaferri, 2011, Karahan and Ozkan, 2013
- | Lit. on early career *scarring* ! focus on long-run averages of income levels
 - | (ENTER IN RECESSION) Kahn, 2010, Oreopoulos et al. 2012; Oyer, 2006; (FIRM SIZE) Arellano-Bover, 2019; (TEMPORARY CONTRACTS) García-Pérez et al. 2019; Hospido et al. 2018
 - | BEYOND LEVELS, variance and income risk: Cappellari and Leonardi, 2016 & Arellano et al., 2021
- | **This paper:** early career & earnings uncertainty (size+nature) & life-cycle
 - | Important: While the literature finds that earning levels stabilize after 10-15 years, it's not the case for income uncertainty

Outline of Talk

Measuring Early-Career Job Instability

Data

Job-Unstable vs. Job-Stable

Estimating Life-Cycle Earnings Dynamics

Sources of Earnings Variance over the Life-Cycle

Conclusion

Measuring Early-Career Job Instability

Goal: Identify workers disproportionately exposed to job instability

- | Exploit rigid *dual* structure of Spanish labor market
 - | measure instability over longer periods of times
 - | above and beyond macro shocks and trends
 - c.f. graduating in a recession, cohort

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 - c.f. graduating in a recession, cohort
- | Focus on male college graduates
 - | Minimize other forms of heterogeneity.
 - | Moreover, our methods allows for ex-ante heterogeneity.

Data: Spanish Continuous Sample of Working Histories

% rep. random sample of all workers affiliated to the SSA / year

- | Panel: selected workers are kept for subsequent years

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Social Security records

- | 2004-2015, working histories back to the 60s (repres. since 1988)
- | Daily info on all contracts, full-time/part-time indicator
- | Top-coded

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Tax records

- | Yearly info on all taxable labor income sources
- | Non top-coded

Characterizing Early-Career Job Instability



Characterizing Early-Career Job Instability



- | Three job states:
 - | Employed on an open-ended contract (Permanent)
 - | Employed on an fixed-term contract (Temporary)
 - | Unemployed
- | For all workers with labor market attachment during Early Career
 - | If days worked as temp during Early Career > days worked as perm ! Job-Unstable
 - | Otherwise ! Job-Stable

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50% Threshold not binding

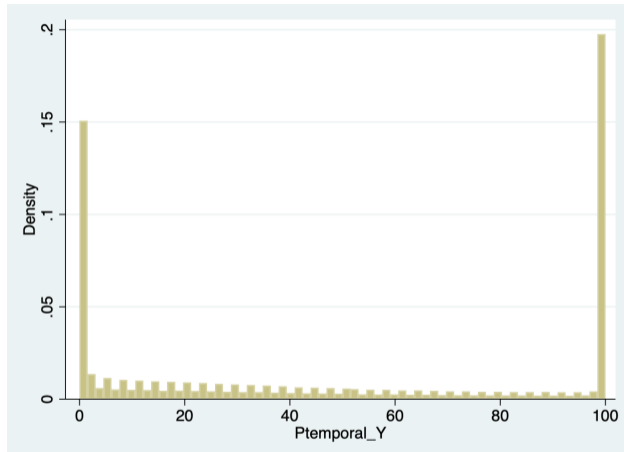


Figure: Share of Days Worked in a Temporary Contract by 30

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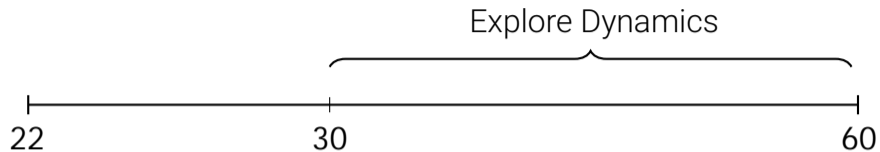
A Statistical Model to Capture Life-Cycle Dynamics

Estimation

Sources of Earnings Variance over the Life-Cycle

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Life-Cycle Earnings Dynamics



Life-Cycle Earnings Dynamics



Let the log earnings of a worker i of age a be:

$$\log Y_{ia} = \underbrace{g(a, X_{ia})}_{\text{ex-ante heterogeneity}} + \underbrace{\{z_i\}}_{\text{unobserved}} + \underbrace{\{z_{ia}\}}_{\text{transitory}} + \underbrace{\{z_{ia}\}}_{\text{persistent}}, \quad (1)$$

Ex-Ante *Unobserved* Heterogeneity

- : Unobserved Heterogeneity: $\epsilon_i \sim N(0, \sigma^2)$
 - Age-independent, captures initial conditions as of graduation
 - E.g. wage differences b/c major choice, diligence,...
- : Heterogeneity in income profiles: $\epsilon_i \sim N(0, \sigma^2)$
 - Proportional to age, captures different expected income growth due to initial conditions
 - E.g. job-ladder differences b/c major choice

Ex-Post Uncertainty (*Luck*)

z : Persistent: $z_{ia} = \alpha z_{i,a-1} + \epsilon_{ia}$, with shock $\epsilon_{ia} \sim N(0, \sigma_{\epsilon,a}^2)$

- | Age-specific, captures shocks that have long-run consequences
- | E.g. big layoff

u : Transitory: $u_{ia} = \eta_{ia} + \eta_{i,a-1}$, with shock $\eta_{ia} \sim N(0, \sigma_{\eta,a}^2)$

- | Age-specific, captures shocks that are perceived as short lived
- | E.g. temporary wage cut or freeze

Estimation

- | β , α , and γ are functions of age:
 - β , α , and γ are cubic functions of age
 - β , α , and γ are time-invariant

- | Method: GMM
 - Autocovariance matrix up to 6 lags
 - Efficient weighting matrix

Estimates: Life-Cycle

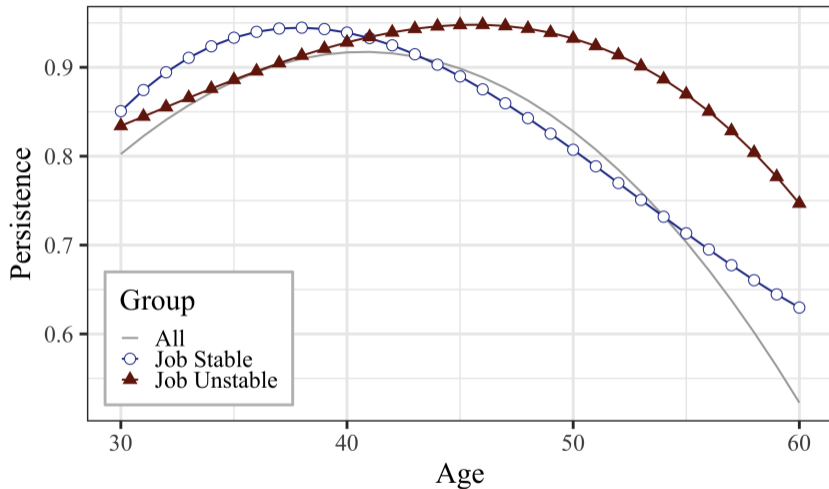


Figure: Persistence

Estimates: Life-Cycle

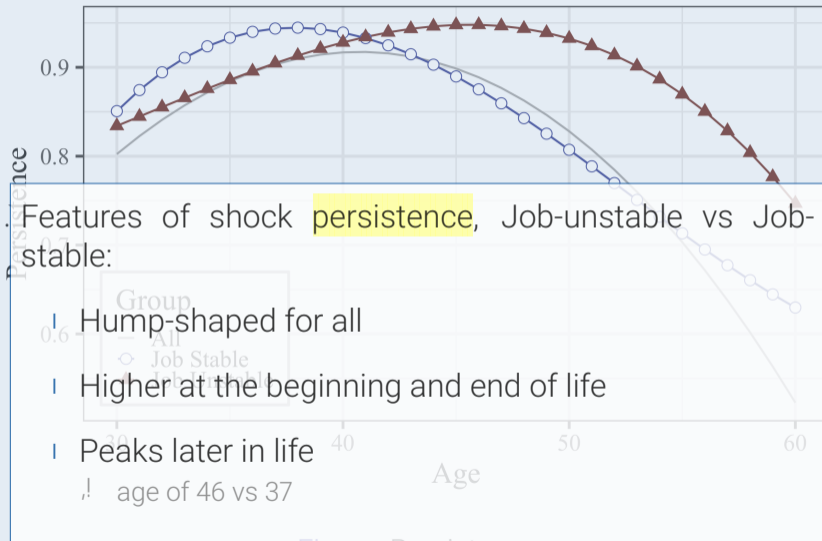


Figure: Persistence

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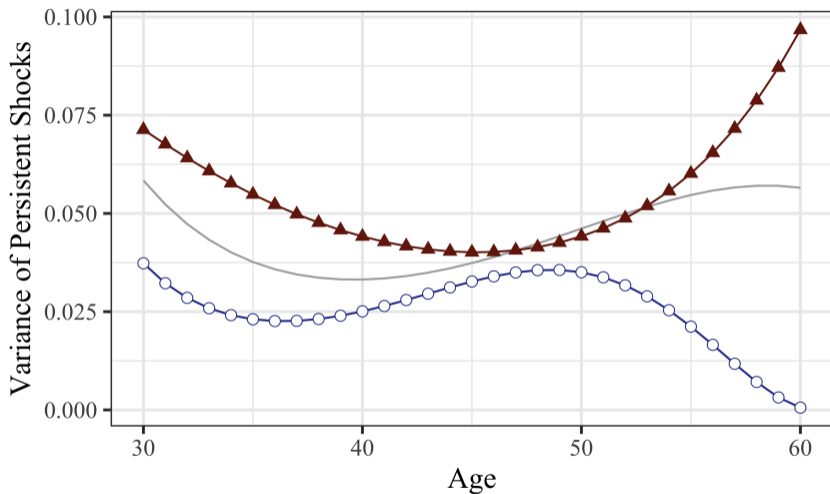


Figure: Variance of Persistent Shocks

Estimates: Life-Cycle

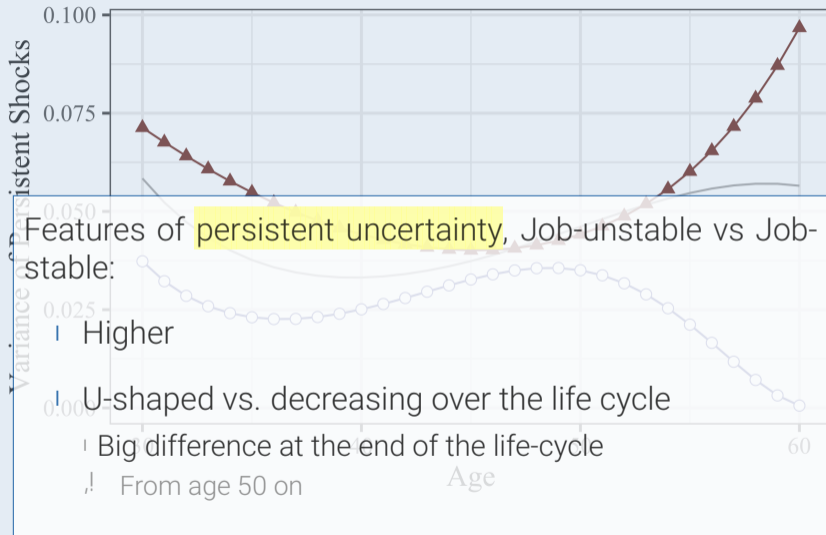


Figure: Variance of Persistent Shocks

Estimates: Life-Cycle

Figure: Variance of Transitory Shocks

Estimates: Life-Cycle

Features of **transitory uncertainty**, Job-unstable vs Job-stable:

- | Higher
- | Flat vs decreasing over life
 - ! Big difference at the end of the life-cycle

Figure: Variance of Transitory Shocks

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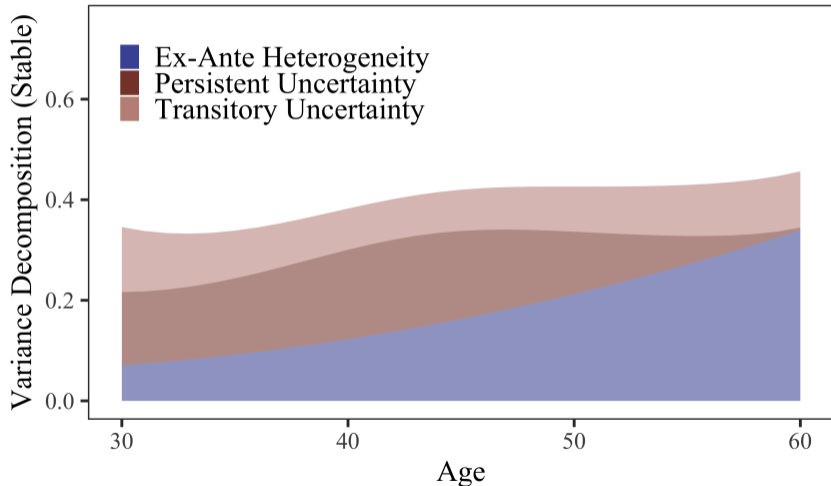
Decomposing Sources of Earnings Variance

How much of total earnings variance of the life cycle is accounted for by

- | Ex-ante heterogeneity
 - Cumulative effect of initial heterogeneity
- | Ex-post uncertainty (luck)
 - transitory
 - persistent: Combination of behavior of persistence () and variance of persistent shocks (σ^2)

Decomposing Sources of Earnings Heterogeneity

Job-Stable



Decomposing Sources of Earnings Heterogeneity

Job-Unstable

Decomposing Sources of Earnings Heterogeneity

Job-Unstable

Features, Job-unstable vs Job-stable:

- | Overall uncertainty higher (luck matters more)
- | Smaller role of ex-ante heterogeneity
 - | Job-ladder and education not as important

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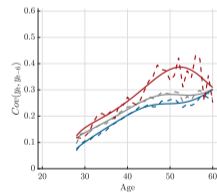
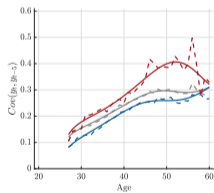
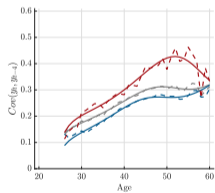
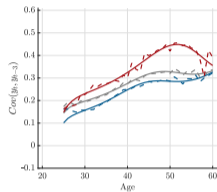
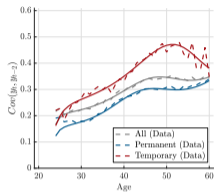
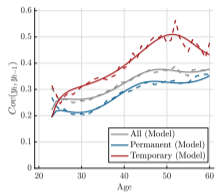
Conclusion

Conclusions

- | Workers exposed to job instability during early-career years face higher uncertainty throughout the life-cycle
 - | They experience higher volatility in their income shocks
 - | Shocks are increasingly persistent until later in life, compared to job-stable
- | Decomposing the sources of increasing uncertainty shows that
 - | Variance of earnings shocks does not fade out with age, as opposed to job-stable
 - | Risk play less of a role for the job-stable than job-unstable. Persistent component of uncertainty plays a bigger role for the job-unstable, especially later on in the life-cycle.

APPENDIX

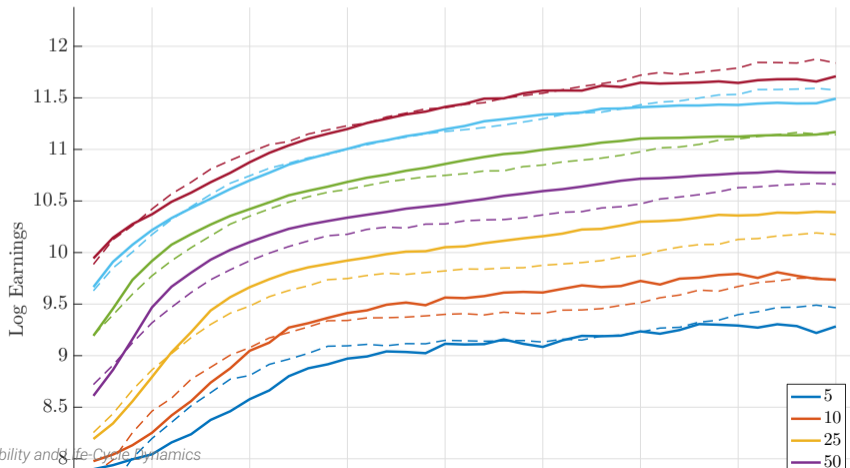
Autocovariance Fit



Simulation Fit

*Estimated earnings within a model of job transitions, from CGMV 2018.

Figure: Quantiles of Log earnings: Data (solid) vs. Simulation (dashed)



Sample Selection

Table: Number of observations kept at each step

Sel. Criteria	Remaining Obs
Begin with	10.88M
Age missing	10.87M
Contract missing	10.87M
Education missing	10.14M
Age 22-60	6.42M
Drop duplicate spells	5.41M
Total	5.41M
Men	2.95M
Women	2.46M

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		College
Men	2.95M	418K
Women	2.46M	571K