Department of Economics
Research Area: Labor Economics

Demographics in U.S. Labor Market Transitions

How age and gender influence labor market volatility.

Introduction

An ageing labor force is associated with a change in labor market dynamics. Individuals face different hazard rates of entering or leaving any labor market state throughout their lifetime. The volatility of transitions is different for subpopulations defined by gender and age.

This study aims at revealing differences in the dynamics of labor market transitions for those groups on a four state labor market (full-time employment, part-time employment, unemployment, inactivity) as well as at decomposing the U.S. unemployment volatility with regard to these dynamics.

Methodology

- Correction of time aggregation bias using robust bootstrapped Eigendecomposition (Ossadnik, forthcoming)
- Close to Hairault et al. (2019) and Choi et al. (2013)
- 4 state labor market: Full-time employment, part-time employment, unemployment and inactivity
- Actual panel weights and appropriate demographic groupings (misregarded in literature)
- Dynamics of transition hazard rates defined as standard deviation of the cyclical component of logged detrended time series (Shimer, 2012)
- Unemployment volatility decomposition using monthly group specific steady state unemployment rates and the β-approach

Data

Database: Current Population Survey (CPS, U.S. Census Bureau) for 1986-2019

- 22.5 million observations, 52.5 % female, 72k responses per single month on avg.
- Avg. age of able-bodied population: 36 years (1986) ➔ 40 years (2019)
- Micro level information on individual labor market situation for up to 4 consecutive months in two consecutive years allows for estimation of flows and stocks on the labor market

Contribution

- Robust instantaneous transition rates for the most granular level feasible given the data
- Transition volatility for a four state labor market featuring part-time employment and inactivity for 18 demographic sub-groups defined by gender and age
- Decomposition of unemployment volatility by age, gender and four labor market states

Literature

Choi, Sekyu, Alexandre Janiak, and Benjamín Villena-Roldán (2014). "Unemployment, Participation, and Worker Flows Over the Life Cycle." *The Economic Journal*, 125(589), pp. 1705–1733.

Hairault, Jean-Olivier, François Langot, and Thepthida Sopraseuth (2019). "Unemployment Fluctuations Over the Life Cycle." *Journal of Economic Dynamics and Control*, 100, 334–352.

Ossadnik, Johannes Michael (forthcoming). "Eigendecomposition for Estimating Instantaneous Transition Rates: A Methodological Examination."

Shimer, Robert (2012). "Reassessing the Ins and Outs of Unemployment." *Review of Economic Dynamics*, 15(2), 127–148.

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Results

- Volatility of unemployment exit rates increases with age
- Significant differences in volatility between both genders for transitions between full-time and part-time employment and flows between part-time employment and inactivity
- Increase in volatility for job-finding rates over age less pronounced once taking part-time employment into account.

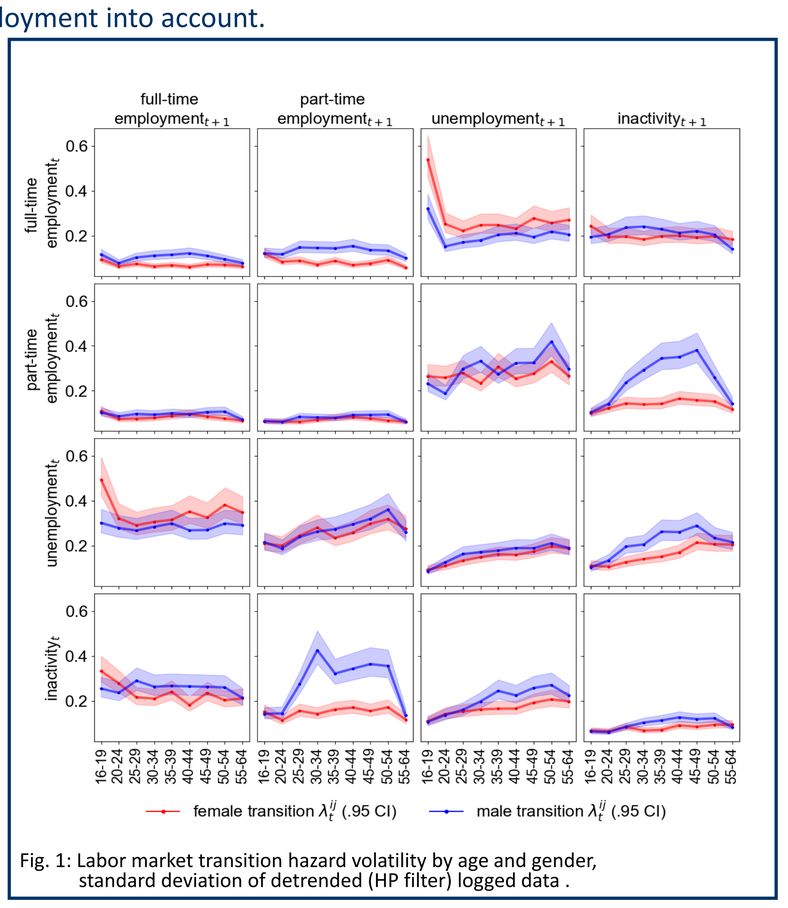

Fig. 1: Labor market transition hazard volatility by age and gender, standard deviation of detrended (HP filter) logged data .

- Contribution to unemployment volatility decreases with age.
- Male population accounts for half of the observed volatility, the female population only for 34%.
- Volatility is driven by transition rates' volatility – especially by job finding rates – and barely by changes in the age composition of the population

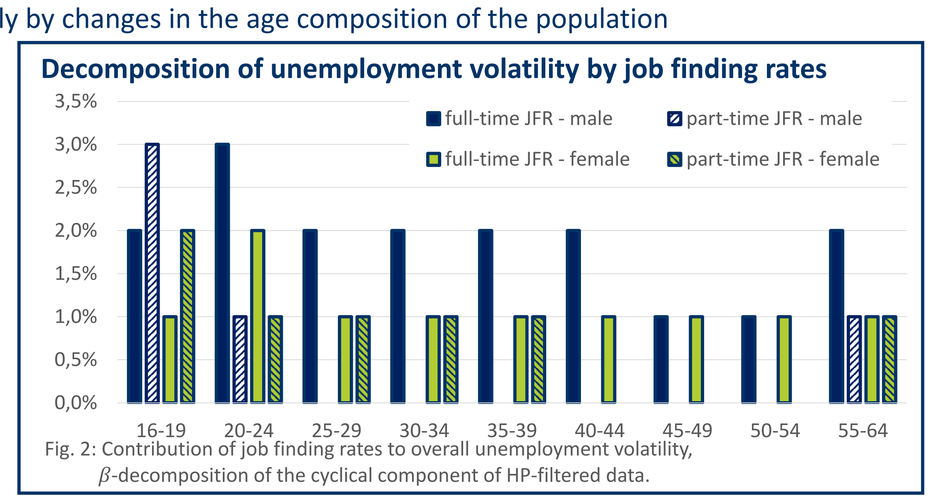

Fig. 2: Contribution of job finding rates to overall unemployment volatility, β-decomposition of the cyclical component of HP-filtered data.

- Negative (one standard deviation) TFP shock has negative effects on job finding rates that peak after 1.5-2 years
- Full-time job-finding rate more responsive for men than for women
- Part-time job-finding rate more responsive for women than for men
- Responses of female job-finding rates have similar magnitude, while the male part-time job-finding rate is less responsive than the male full-time job-finding rate

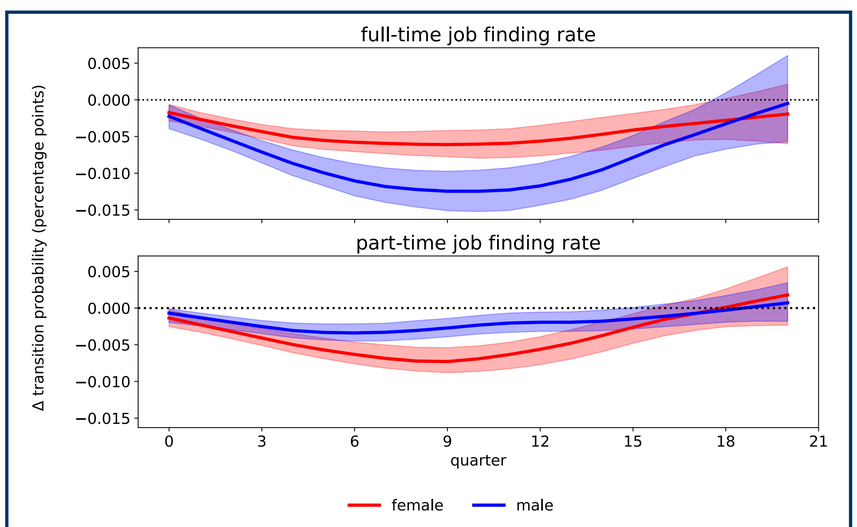

Fig. 3: Response of job-finding rates to a negative (one standard deviation) TFP shock. Smoothened impulse responses of a linear projection with 68% confidence intervals.