Procyclical Unemployment in India

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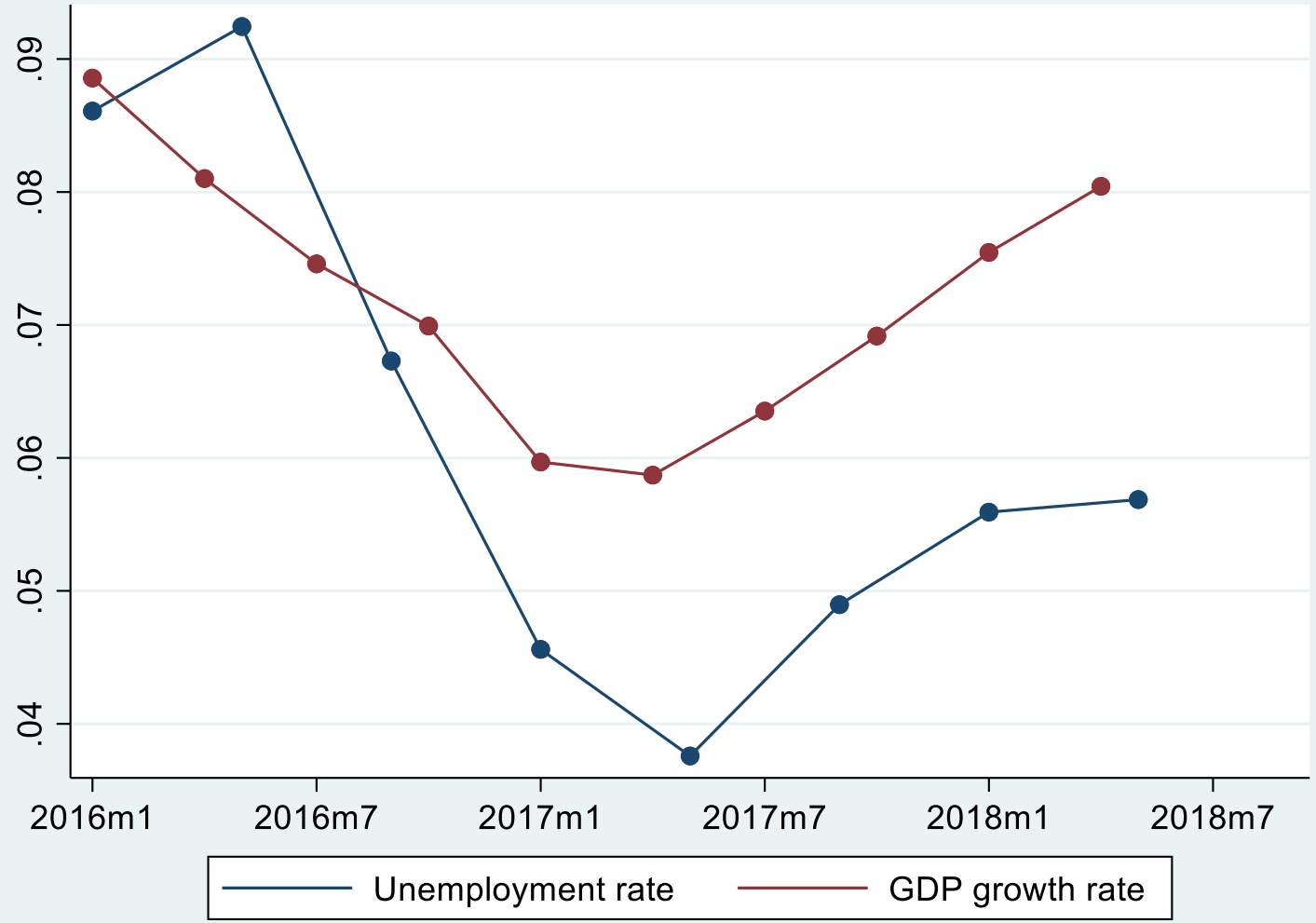
Overview

- Since January 2016, the Centre for Monitoring the Indian Economy (CMIE) has been running a nationally-representative, longitudinal household unemployment survey that tracks respondents 3x a year

- This data allows us to generate the *first ever* estimates of unemployment in India at business cycle frequencies

Figure 1. India's unemployment rate appears to move pro-cyclically



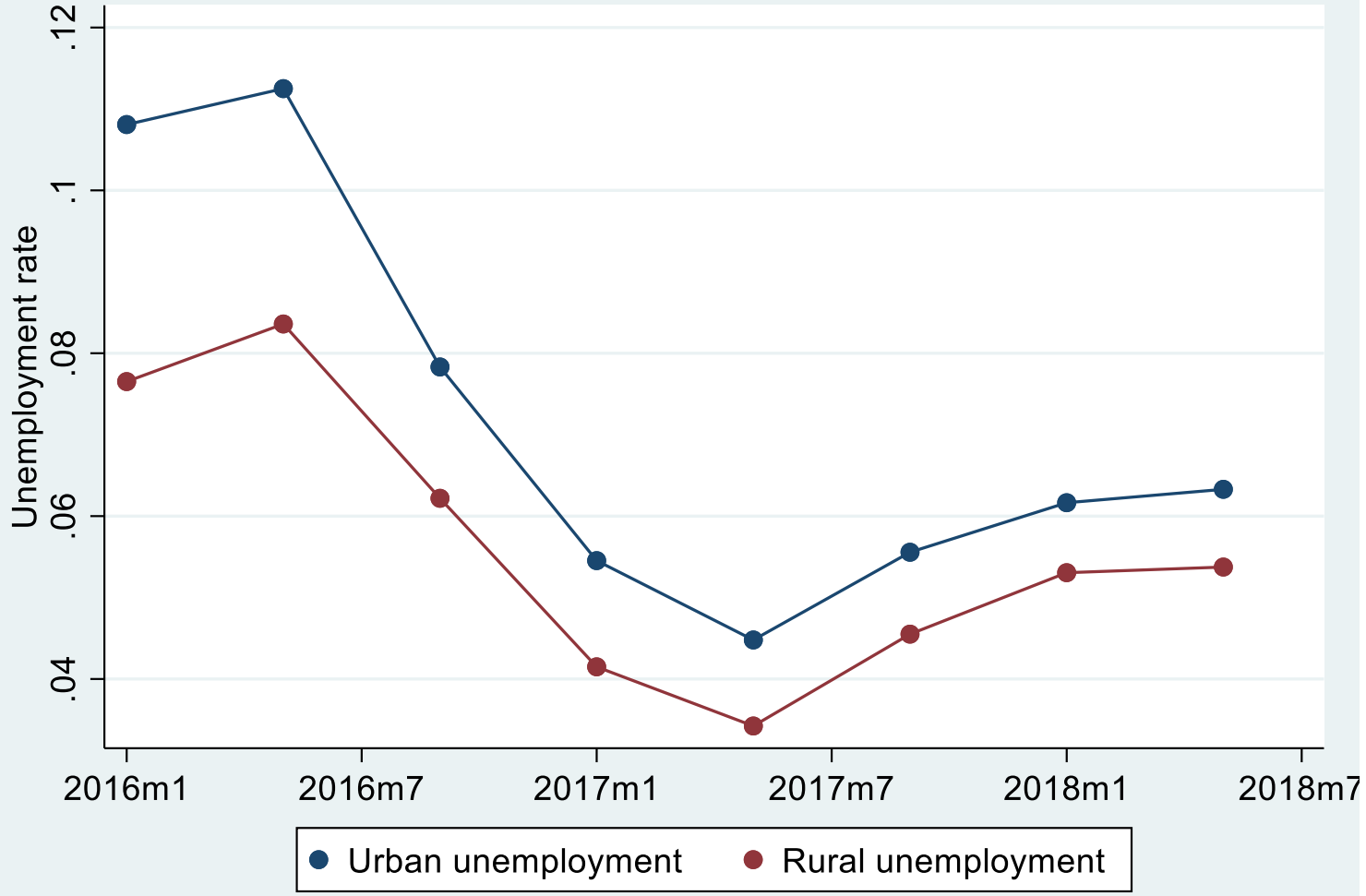
Details:

Quarterly growth rate from FRED. Measures % change in constant price GDP from previous year. See: https://fred.stlouisfed.org/series/INDGDPRQPSMEI

Unemployment rate includes all persons 15+ who are labor force participants.

We see the same trend in the unemployment rate if we estimate only on the sample that responded in all waves. (See Appendix)

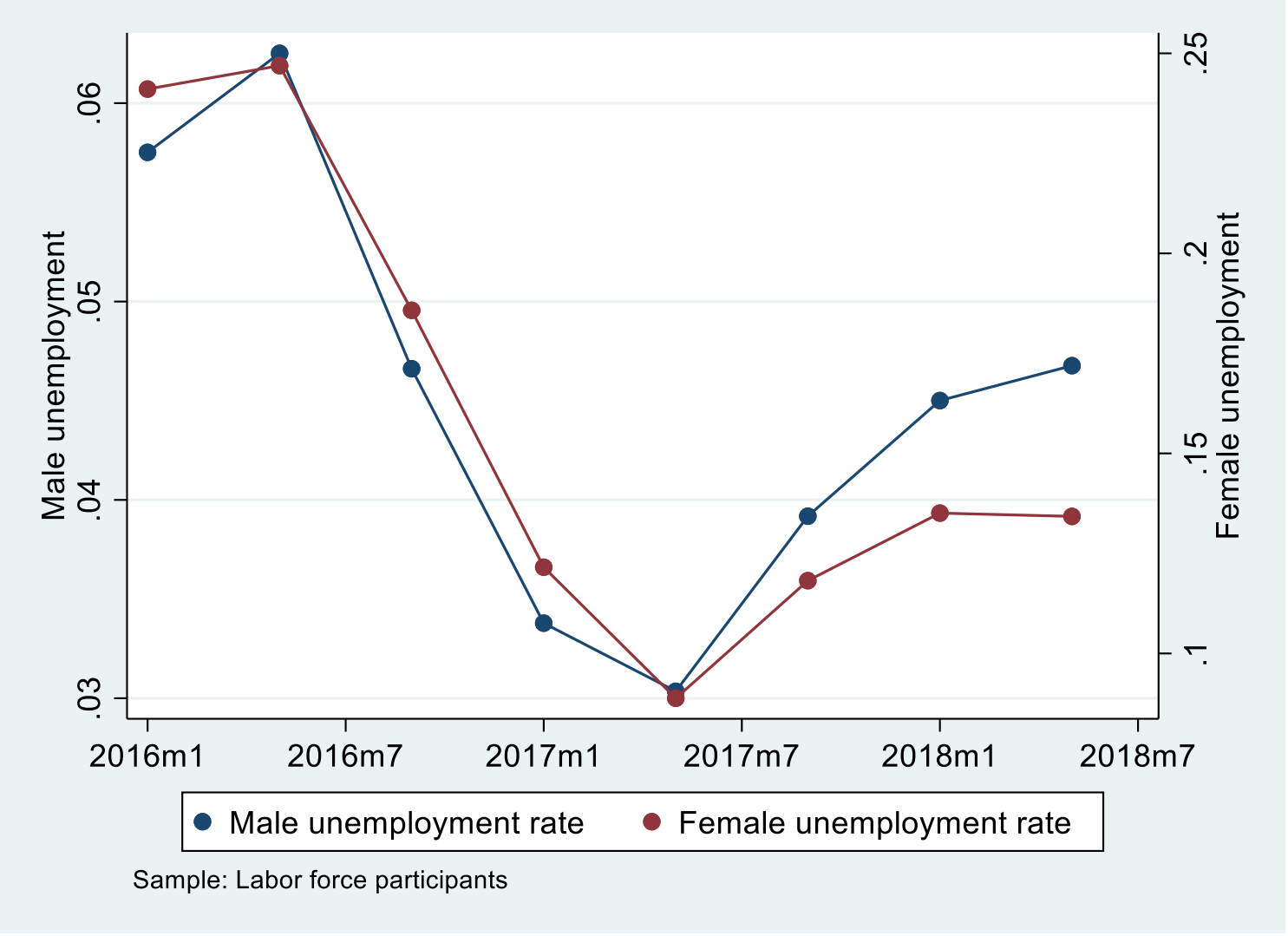
Figure 2a. We see similar patterns in rural and urban areas



Details:

Rural vs. urban areas classified according to the 2011 Census

Figure 2b. We also see similar patterns for men and women

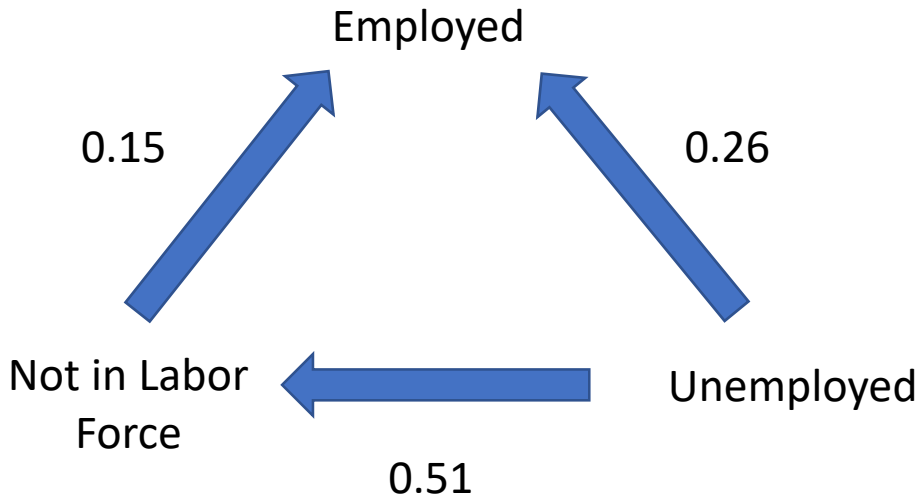


Note:

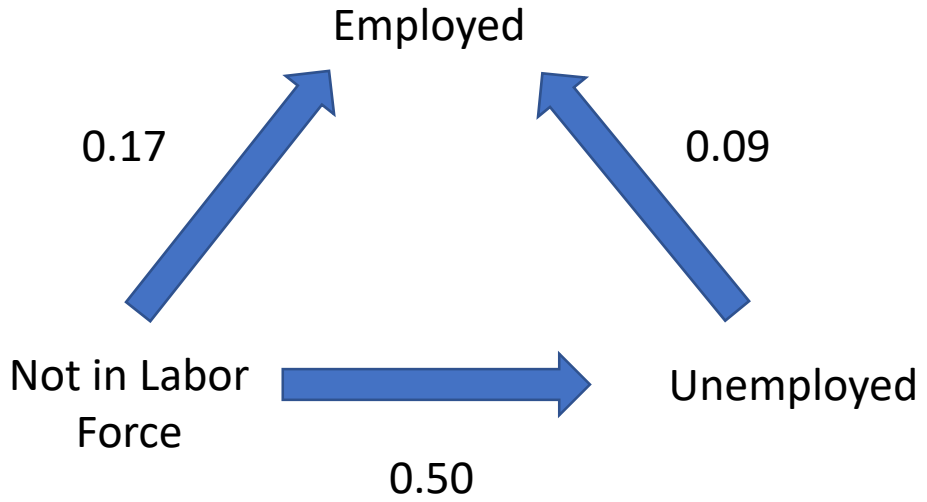
Volatility in the female unemployment rate is much higher.

However, since men are 86% of the labor force, the smaller movements in the male unemployment rate are still consequential for aggregate unemployment.

Labor market flows for men



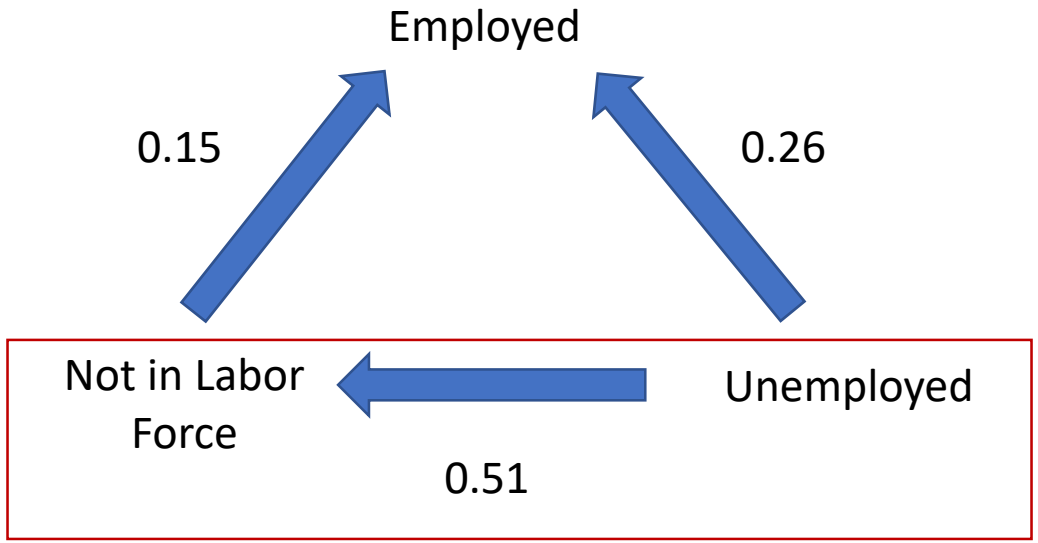
May 2016 to August 2017
[Waves 2 to Wave 5]



August 2017 to August 2018
[Waves 5 to Wave 8]

Notes: Figures show average net flow rates (in percentage points per wave) between labor market states, as a fraction of all men ages 15+. A wave corresponds to a period of 4 months. Flows are identified from the panel structure of data.

Labor market flows for men



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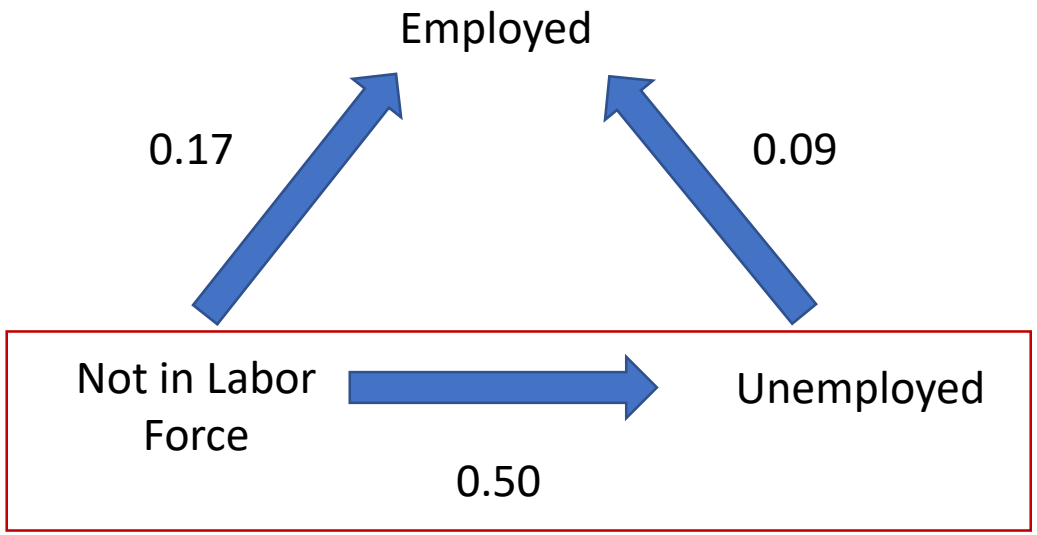

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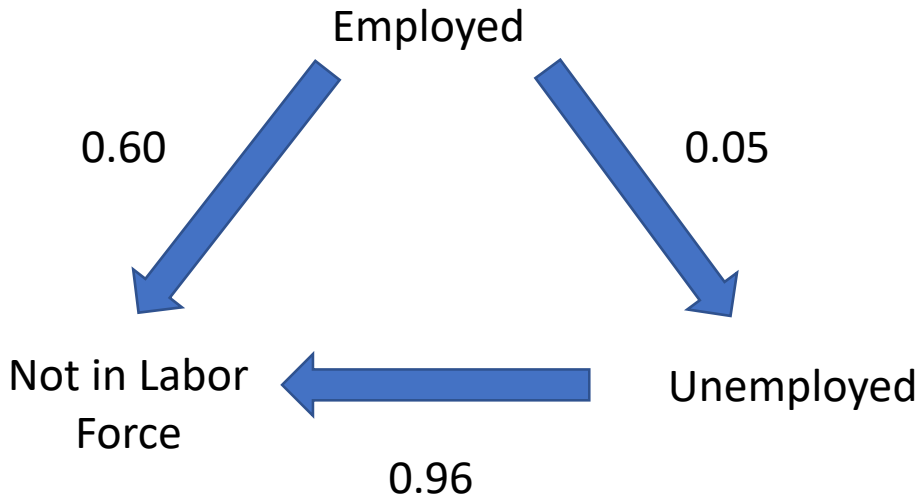
Labor market flows for women



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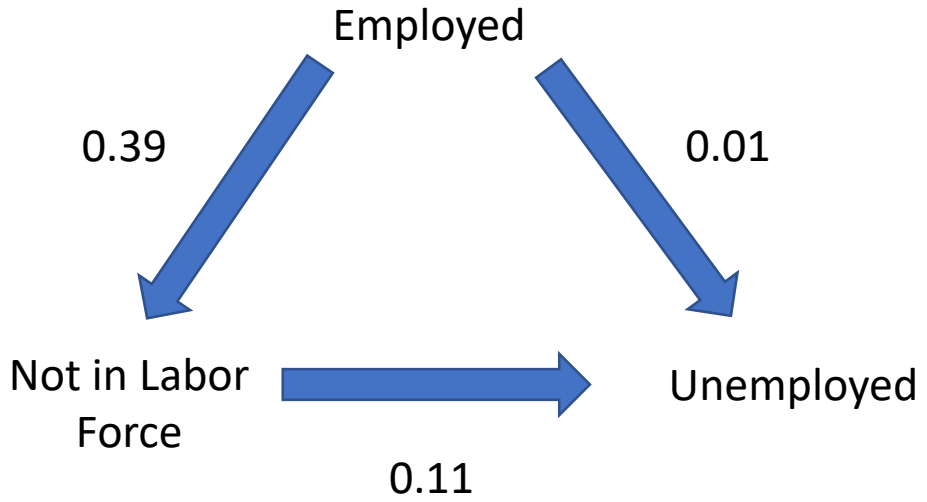

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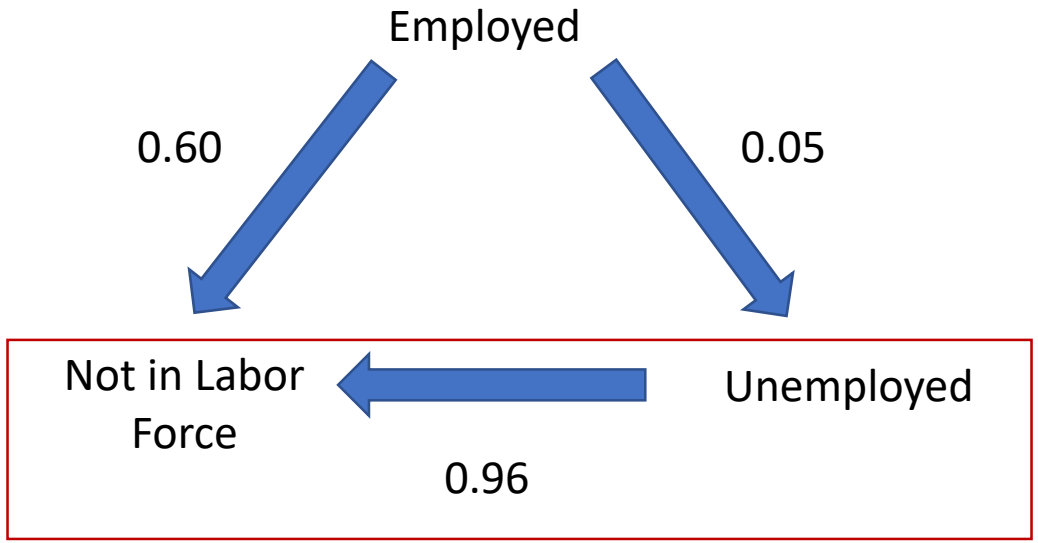

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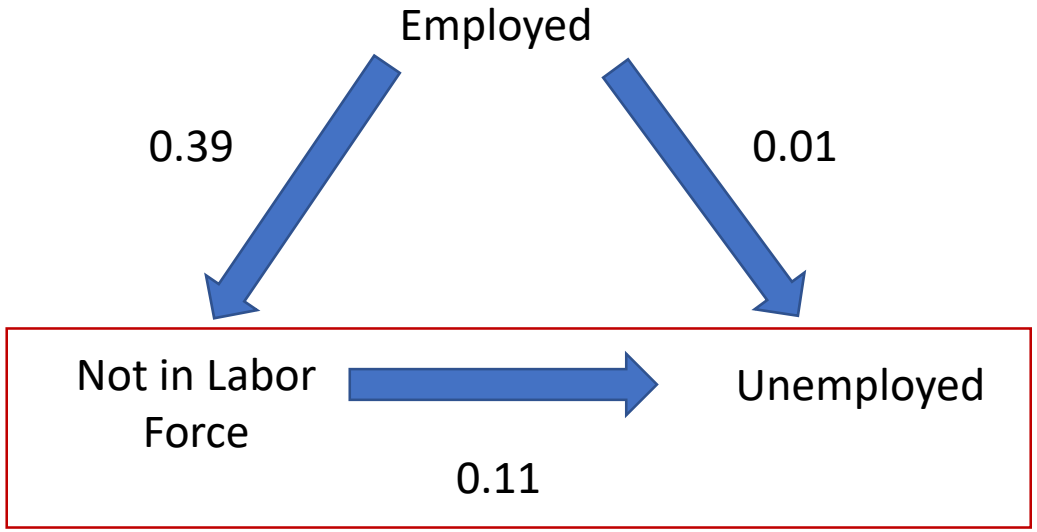

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Who are the marginal job seekers? [Men]

Self-Described Occupation while unemployed	Fraction of people who switch from Unemployed -> NLF
Student	70%
Home Maker	18%
Unoccupied	9%
Other	3%

May 2016 to August 2017
[Waves 2 to Wave 5]

Self-Described Occupation while not in labor force	Fraction of people who switch from NLF -> Unemployed
Student	83%
Home Maker	13%
Unoccupied	4%
Other	2%

August 2017 to August 2018
[Waves 5 to Wave 8]

Who are the marginal job seekers? [Women]

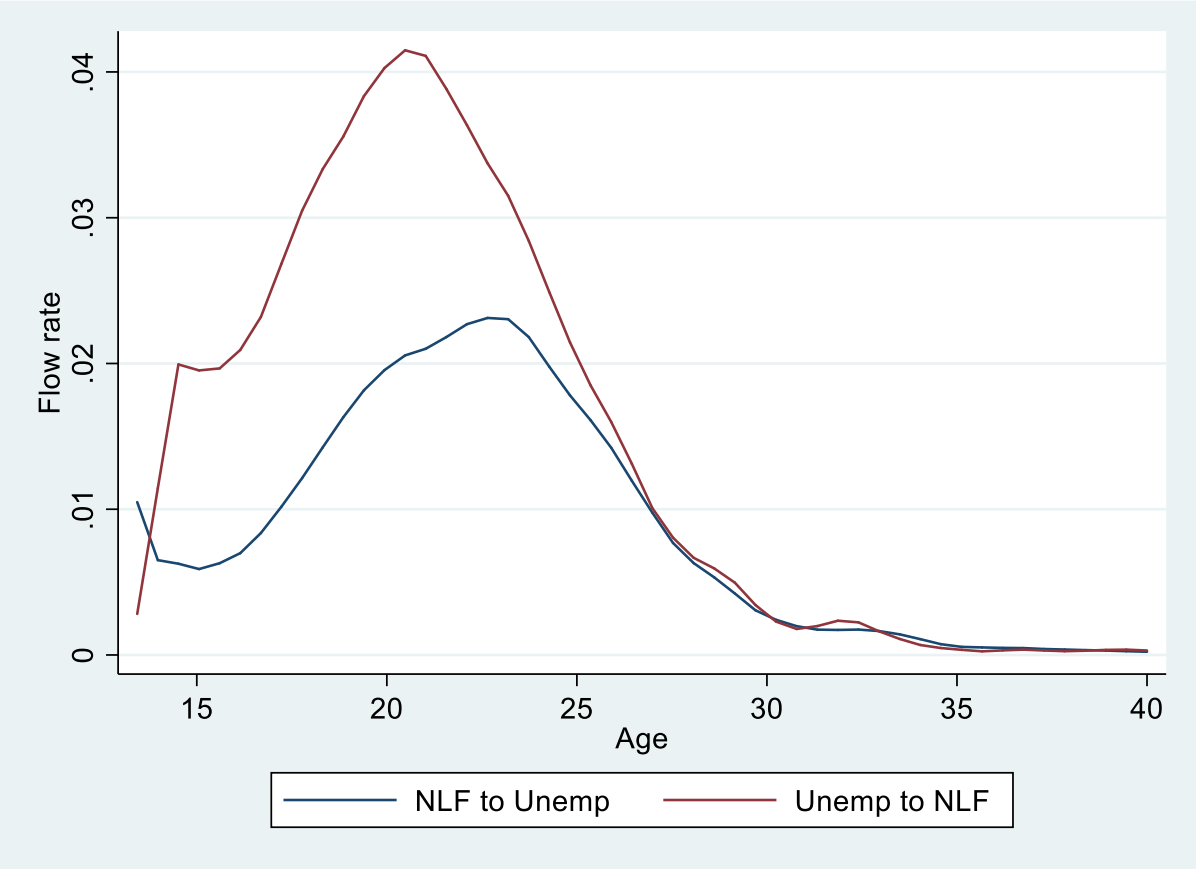
Self-Described Occupation while unemployed	Fraction of people who switch from Unemployed -> NLF
Home Maker	60%
Student	33%
Unoccupied	4%
Other	3%

May 2016 to August 2017
[Waves 2 to Wave 5]

Self-Described Occupation while not in labor force	Fraction of people who switch from NLF -> Unemployed
Home Maker	50%
Student	48%
Unoccupied	1%
Other	1%

August 2017 to August 2018
[Waves 5 to Wave 8]

NLF / Unemployment flows by age [Men]



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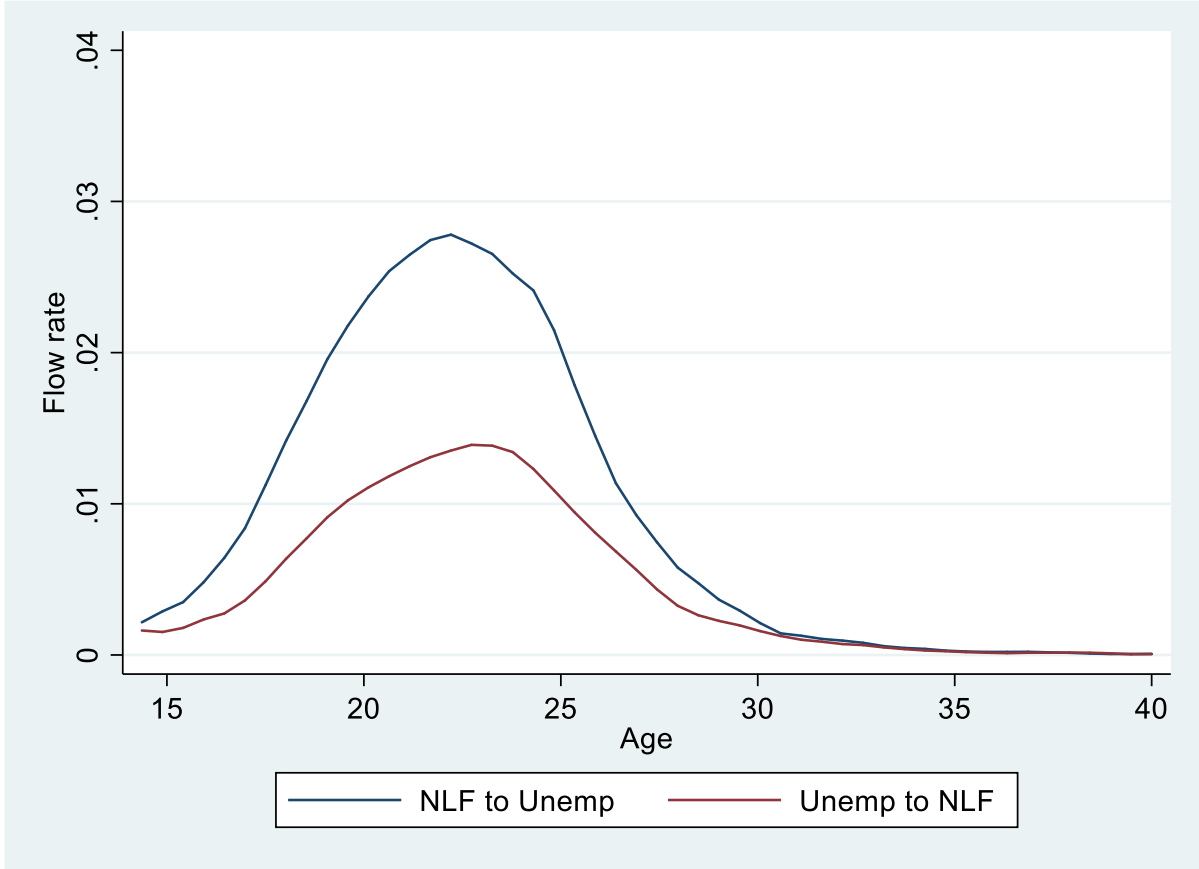

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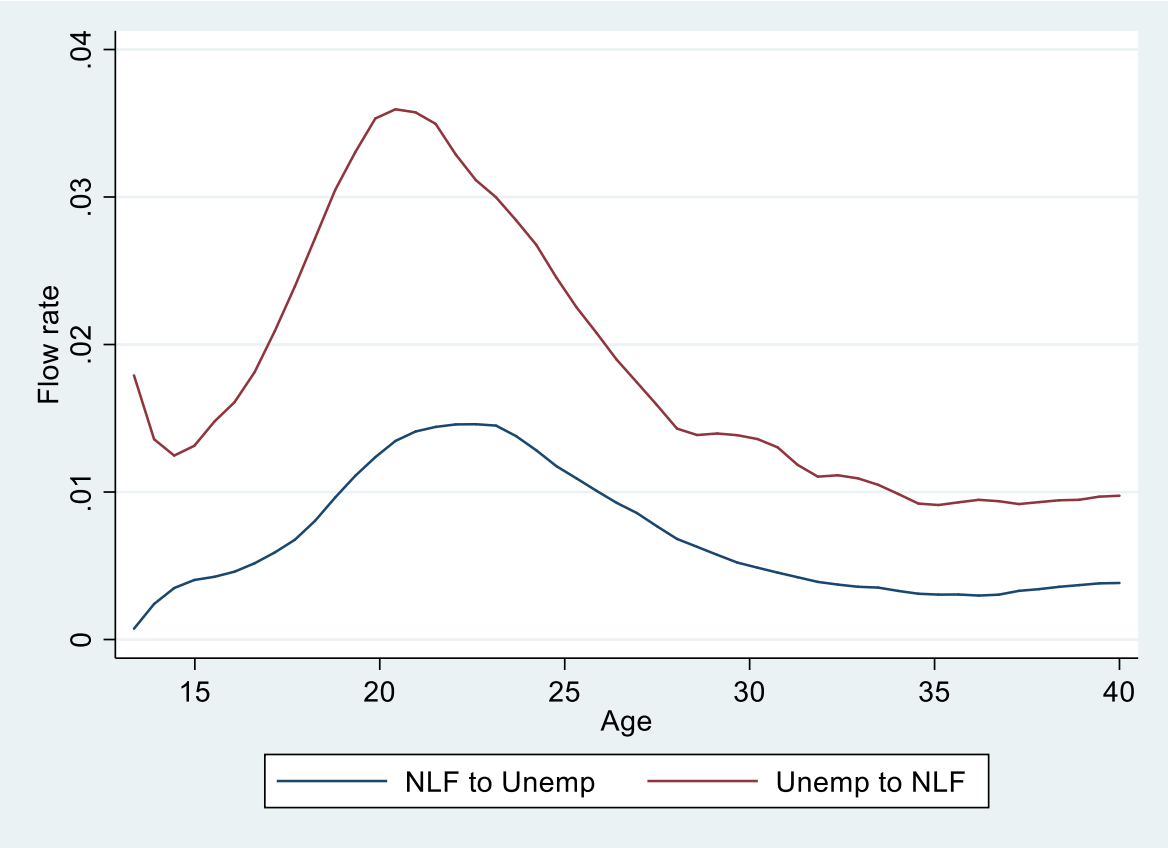
NLF / Unemployment flows by age [Women]



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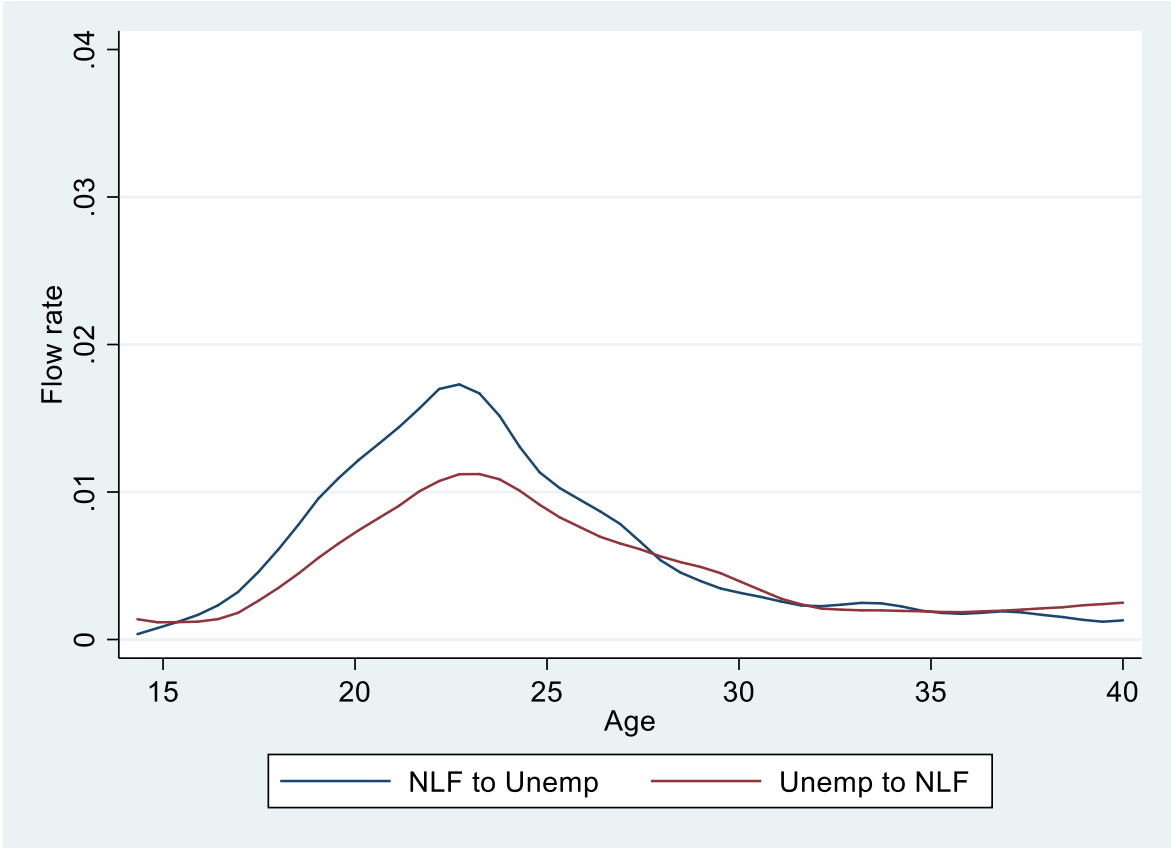

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Procyclical Labor Force Participation Rate

- Pro-cyclical unemployment appears to be driven by pro-cyclical labor force participation:
  - When GDP growth is on a downwards trajectory, unemployed people stop searching
  - When GDP growth is on an upwards trajectory, people who weren't looking for a job start searching again

- In theory, LFPR could either be procyclical or countercyclical (Van Zandweghe 2017):
  - "Discouragement effect"– When there are few opportunities / low wages, people drop out of the labor force
  - "Added worker effect" – Job loss by one household members spurs others to join the labor force to make up for lost income

Plausibility

- Body of evidence suggests that schooling decisions are particularly sensitive to available work opportunities:
  - In India, Shah and Steinberg (2016) find that adults complete 0.2 fewer years of school for each year of positive rainfall shock exposure from ages 11-13
  - In the U.S., Cascio and Narayan (2017) find that in areas with a surge in labor demand from fracking led to increased high school dropout rates
- Ethnographic work (such as Jeffrey [2010]) suggests that many men in colleges are *passing time*, waiting for employment opportunities to arise

Take-aways

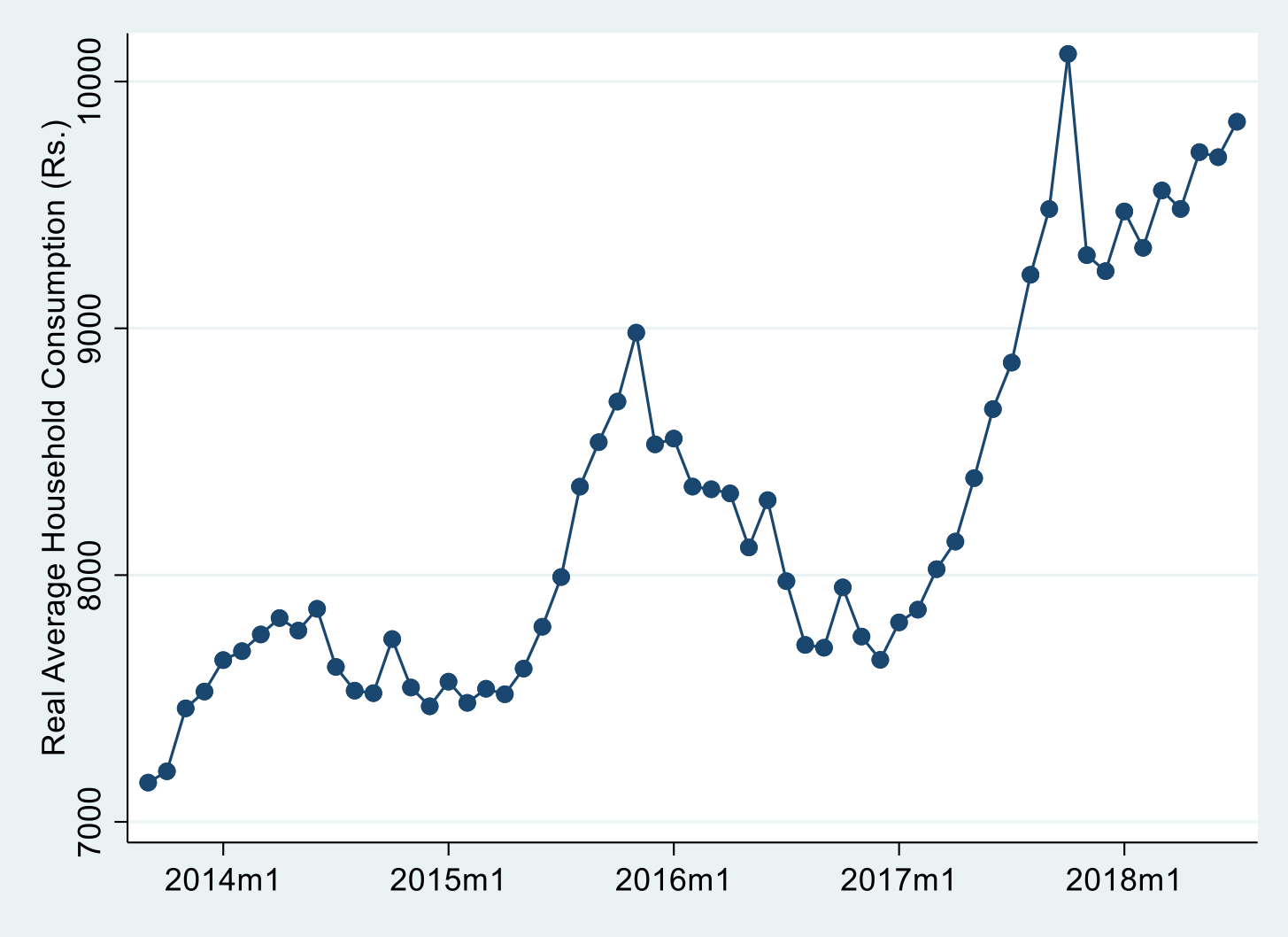
1. Movement in the unemployment rate depends more on changes in search behavior than on the hiring rate
2. Changes in search behavior concentrated among young people and students. This is a population that deserves further study
3. It's still unclear how large the gap in search effort is between unemployment and NLF in this data. This needs more research
4. If unemployment involves meaningfully more search effort than NLF, this evidence suggests important economic possibilities:
   - Hints at a very different set of labor market institutions than the U.S., such as flexible wages
   - Strong pro-cyclical LFP suggests a high elasticity of search to beliefs about available job opportunities. This is an important parameter for arguments about the minimum wage, and for the plausibility of coordination failures in the labor market a la Diamond [1982].

Appendix

Details of CMIE Data

- Nationally representative sample of approx. 160,000 households
- Unemployment measured in standard way:
  - Employment status asked of all household members 15+
  - Unemployed if: 1) does not have job on day of survey; 2) wants job; 3) has actively searched in the past 3 months
- To handle attrition, CMIE adds replacement sample

Figure A1. Household consumption tracks the business cycle between 2016-2018 as we would expect



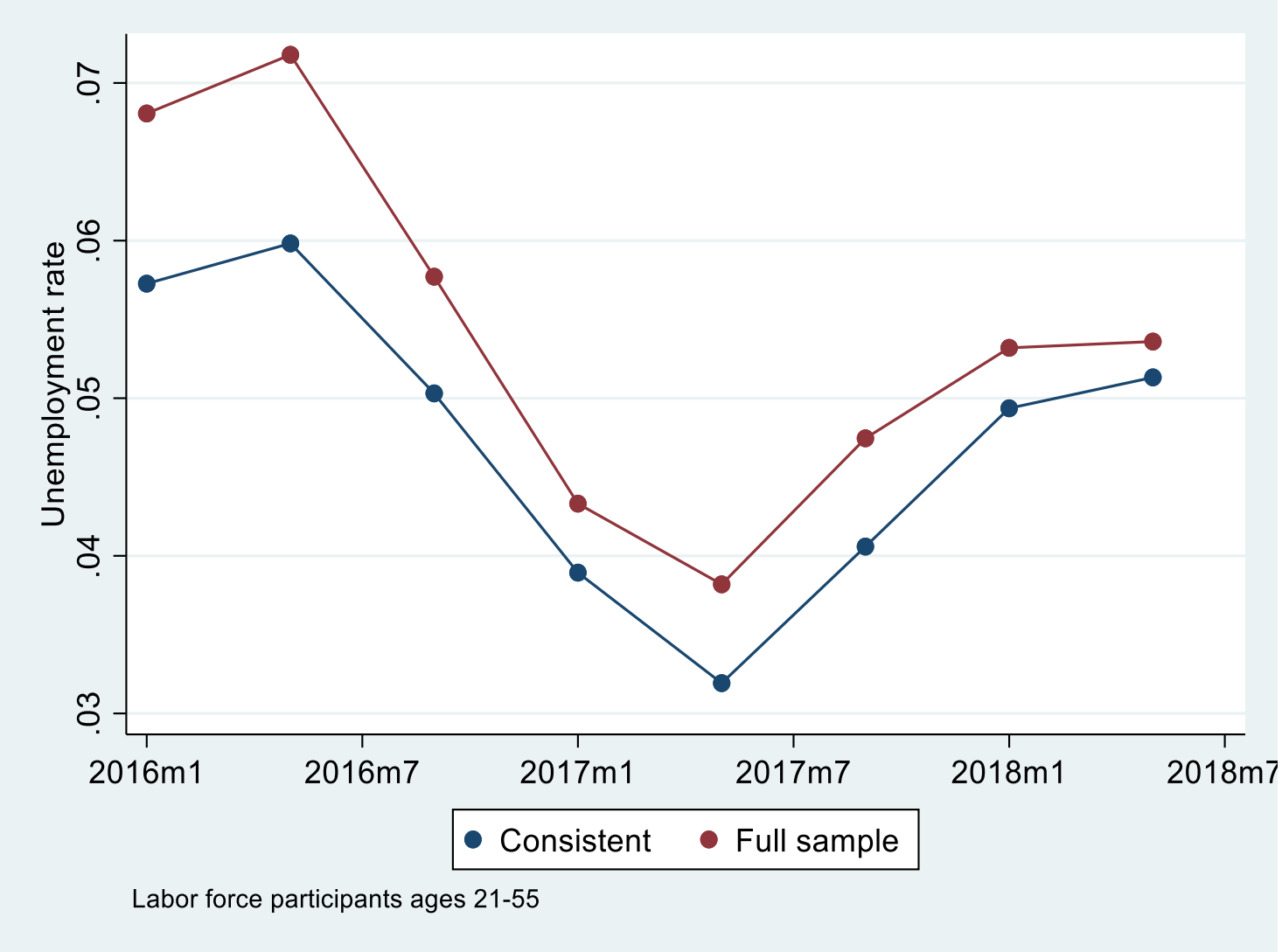
The unemployment survey is an additional module that CMIE added to a longer-running household consumption survey

In the month of the survey, households provide data on consumption over the previous 4 months.

This means that the monthly estimates should be treated as a moving average series with three leads and three lags.

Expenditure reported in nominal terms. This series is adjusted for a 4% yearly inflation rate.

Figure A2. Cyclical variation in unemployment rate does not depend on attrition



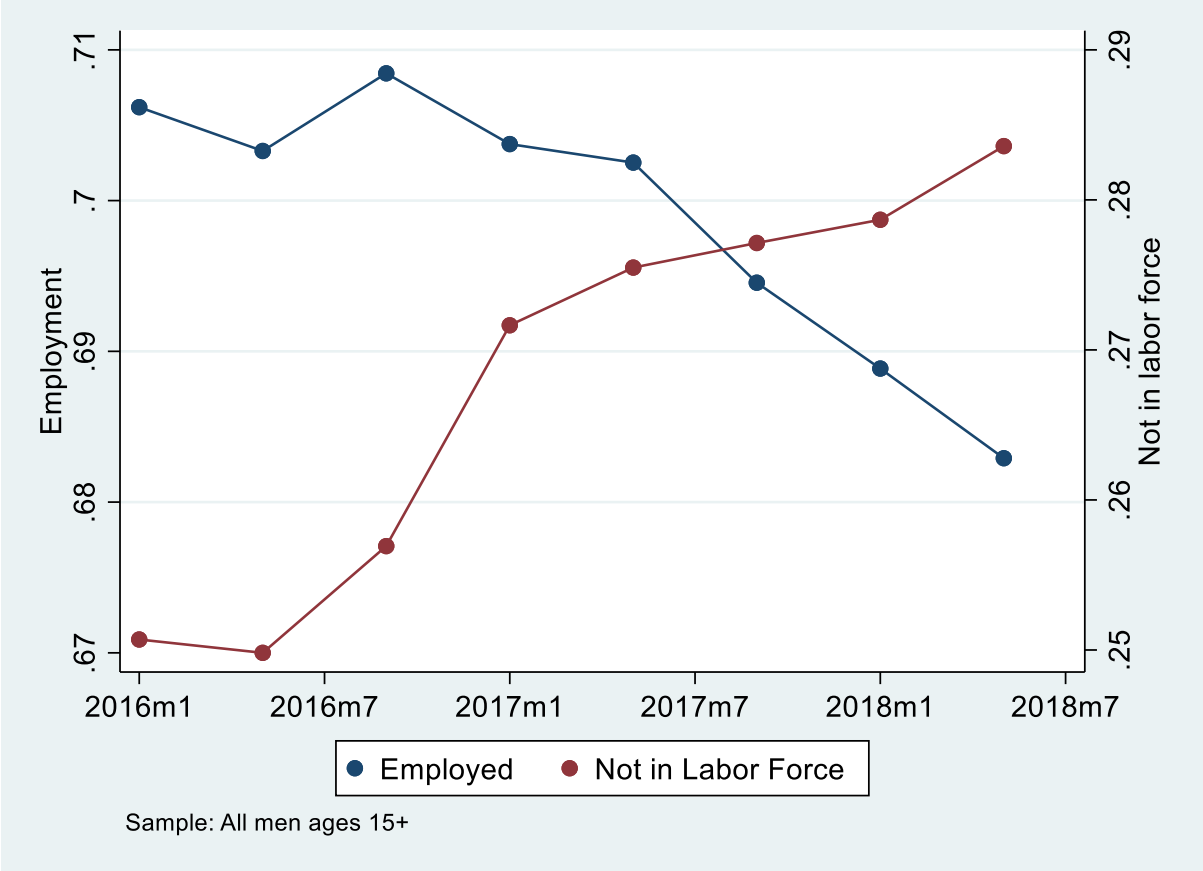
To handle attrition, CMIE replenishes the sample with new observations.

Here, I estimate the unemployment rate separately for the full sample and for the "consistent" sample, i.e. the sample of respondents that responded in every wave.

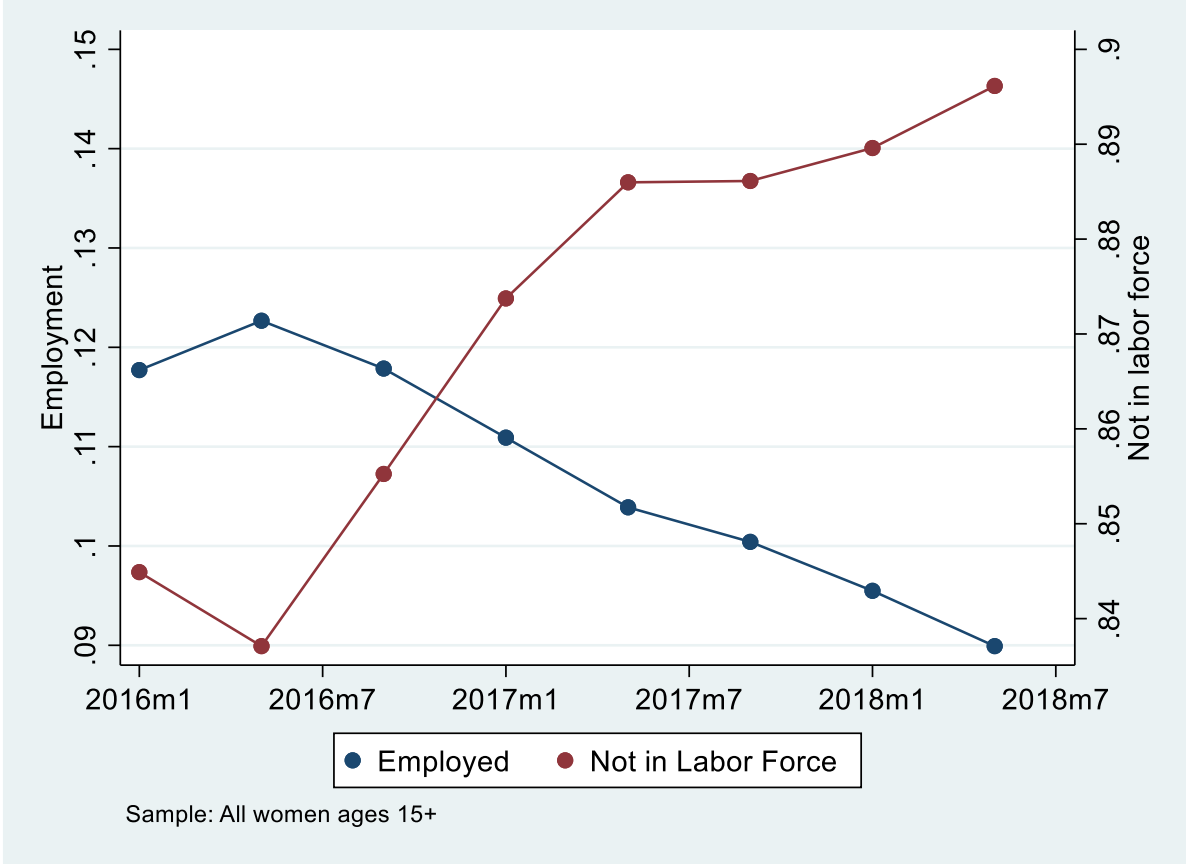
We see the same overall pattern, although the fact that the curve is downwards shifted suggests the unemployed are more likely to drop out.

Figure A3. No obvious cycle in employment or LFP rates

Male



Female



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