The youth labour market
from education to work
before and after the Global Financial Crisis

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and life courses in Asia and Pacific
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Reference

Watson, I. (2020), "The youth labour market: from education to work before and after the global financial crisis", *Journal of Industrial Relations* Vol 62, Issue 1, pp. 33–57.
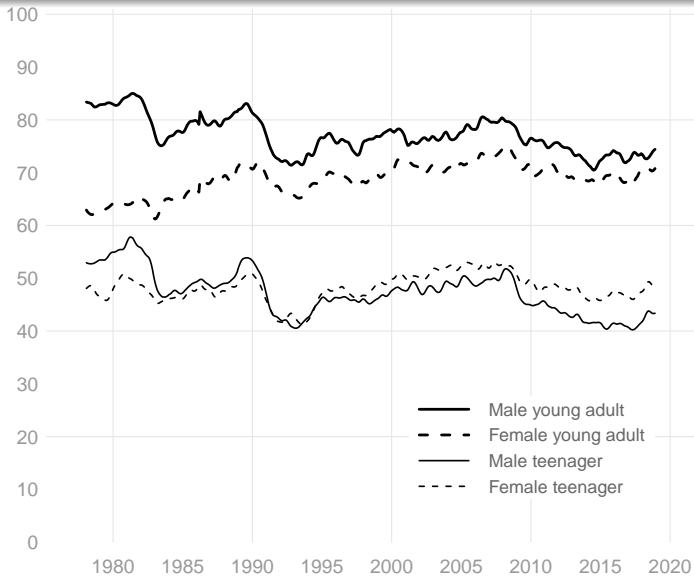Preprint available at: ianwatson.com.au

Overview

- Context
- Key findings
- Data
- Method
- Selected findings
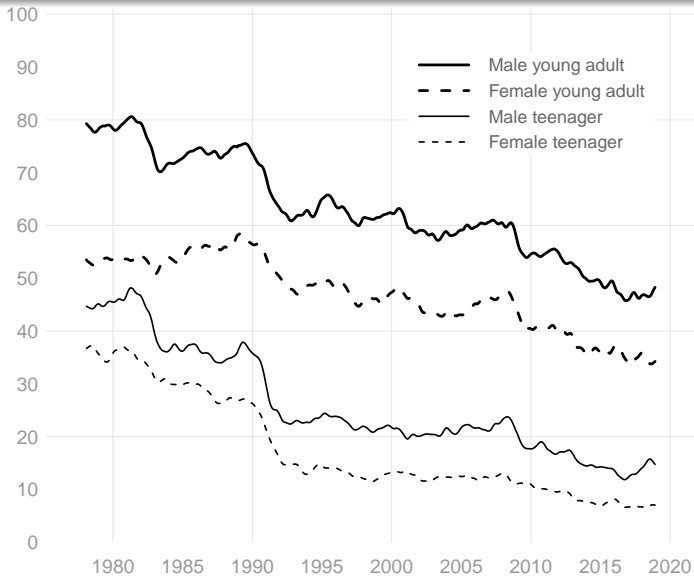- Policy implications
- Available software

Context

- Long term trend: loss of full-time employment for young people (those aged 15 to 24)
- Mixing of education and part-time employment: casualisation and underemployment issues — these continue into post-education phases of lif
- Concern with dangers of long-term labour market marginalisation

Employment to population ratios in youth labour market (%)

Legend:
- Male young adult (solid thick line)
- Female young adult (dashed thick line)
- Male teenager (solid thin line)
- Female teenager (dashed thin line)

Full-time employment to population ratios (%)

Legend:
- Male young adult (solid)
- Female young adult (dashed)
- Male teenager (thin solid)
- Female teenager (thin dashed)

Research question

- Taking into account these long-term changes, did the Global Financial Crisis (GFC) have an effect on the youth labour market?
  - gaining employment (employment outcomes)
  - quality of employment (underemployment and casualisation)
- Method: compare two cohorts of young people—from two different periods (pre-GFC and post-GFC)
- Aim: disentangling **period** effects from **ageing** effects and **cohort** effects
- Statistical steps: Sequence analysis, cluster analysis and multilevel multinomial regression modelling

Summary of key findings

- Post-GFC cohort employment outcomes considerably worse than pre-GFC outcomes
- Inference that significant deterioration in employment outcomes before and after the GFC
- No differences in underemployment or casualisation — already very high
- Long-term marginalisation: complex issue — mixing of employment with studying, 'gap' years and parenthood

Data

- HILDA: Household, Income and Labour Dynamics in Australia
- Longitudinal annual survey, since 2001
- Annual snapshots of same people
- **Calendar data**: activity at each $\frac{1}{3}$ month
- With 16 years of data, provides 576 'states' which respondents have 'passed' through

Sequence analysis

- Different to event history analysis (hazards modelling, survival analysis) and to analysis of transitions between discrete states
- Does not seek to devise models which generate the observed data
- Rather, aims to find patterns in sequences which can form the basis for categorising groups who are similar in their life courses
- Such patterns can also be illuminating in their own right (eg. characteristics, such as 'turbulence', which are distinctive)
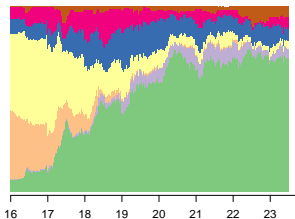
Steps in sequence analysis

- Recast calendar data into **sequences of alphabets**
    - education / job / unemployed / not in the labour force = EJUN
- Use of **optimal matching** to create a distance matrix and then **cluster analysis** to categorise groups
    1. EEJJUNNN → EEJJJJJU
    2. EEJJUNNN → EEJJUUNN (2nd is a closer match)
- Methods: substitution, insertion and deletion - incur penalties and employ a cost matrix (can be fixed, or based on transition probabilities)
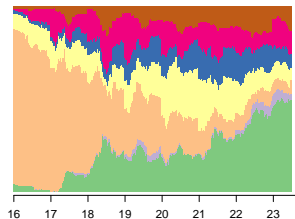
HILDA labour market activity calendar

1. Job: jb
2. More than one job: jbs
3. Full-time education: eft
4. Job and full-time education: eftjb
5. Job and part-time education: eptjb
6. Unemployed: une
7. Not in the labour force: nlf
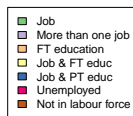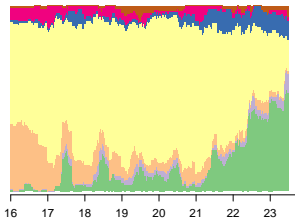8. Missing: *

State distribution for pre-GFC cohort

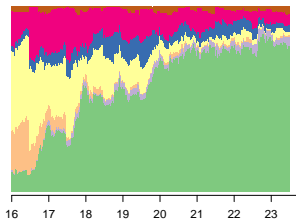# State distribution for post-GFC cohort

Working

Mixed

Education

Legend:
- Job
- More than one job
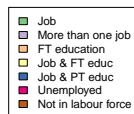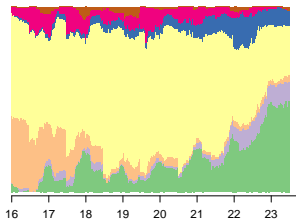- FT education
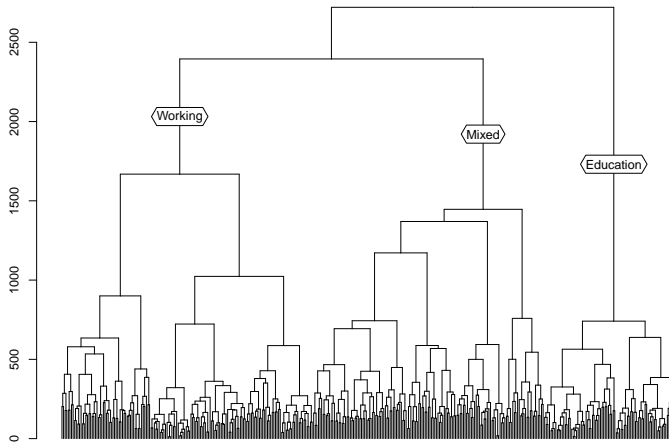- Job & FT educ
- Job & PT educ
- Unemployed
- Not in labour force
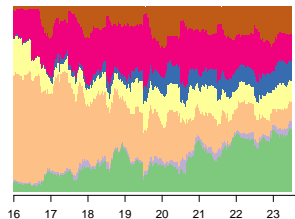
Hierarchical cluster analysis for pre-GFC cohort

Selected findings: duration in labour market states (months)

Categories	jb	jbs	eft	eftjb	eptjb	une	nlf
PRE-GFC COHORT							
Working	41.6	3.6	5.9	14.3	9.9	6.2	2.0
Mixed	16.1	1.3	25.4	11.0	6.8	9.1	6.3
Education	11.0	1.8	9.4	53.8	3.9	3.4	1.2
POST-GFC COHORT							
Working	47.9	2.7	3.3	13.1	6.1	10.3	1.8
Mixed	13.7	2.7	21.8	9.4	6.2	18.1	11.0
Education	14.2	3.3	7.5	49.2	5.2	4.8	1.2

Notes: jb = Job, jbs = More than one job, eft = FT education, eftjb = FT education and job, eptjb = PT education and job, une = Unemployed, nlf = Not in labour force

Selected findings: labour market destinations at age 23 (%)

Destination	Work	Mixed	Educ	Total
PRE-GFC COHORT				
Employed FT	76	52	60	63
Employed PT	11	20	34	19
Unemployed	4	8	3	5
NILF marg attach	6	10	1	6
NILF not marg att	4	11	1	6
Total	100	100	100	100
POST-GFC COHORT				
Employed FT	60	28	52	47
Employed PT	28	26	39	31
Unemployed	9	15	2	9
NILF marg attach	2	16	6	8
NILF not marg att	2	14	2	6
Total	100	100	100	100

Policy implications

Revitalising the youth labour market:

- a Youth Job Guarantee
- Public Sector youth quotas
- youth quotas for contractors supplying Governments
- model of traditional technical education: combination of on-the-job learning and institutional training

Software

- R library TraMineR, with a range of functions, and a comprehensive user guide:

  Gabadinho, Alexis, Gilbert Ritschard, Nicolas S. Müller and Matthias Studer 2010, *Mining sequence data in R with the TraMineR package: A user's guide*, University of Geneva: URL: http://mephisto.unige.ch/traminer.

  – 2011, 'Analyzing and Visualizing State Sequences in R with TraMineR', in: *Journal of Statistical Software* Vol. 40. No. 4, R package version 2.0-8, pp. 1–37, DOI: 10.18637/jss.v040.i04.

- SQ-Ados: a bundle of Stata ado programs: sqset, sqtab, sqdes etc, including plotting (sqindexplot) and an optimal matching program (sqom)

- programs explained and steps shown in a *Stata Journal* article:

  Kohler, Ulrich, Christian Brzinsky-Fay and Magdalena Luniak 2006, 'Sequence Analysis with Stata', in: *Stata Journal* Vol. 6. No. 4, pp. 435–460.