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

Ian Watson

Social Policy Research Centre, UNSW, Sydney, Australia
Web: ianwatson.com.au
Email: mail@ianwatson.com.au

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and life courses in Asia and Pacific
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Reference


Overview

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

Concern with dangers of long-term labour market marginalisation
Employment to population ratios in youth labour market (%)

- Male young adult
- Female young adult
- Male teenager
- Female teenager
Full-time employment to population ratios (%)
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 (e.g. 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)
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Job: jb</td>
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<tr>
<td>2</td>
<td>More than one job: jbs</td>
</tr>
<tr>
<td>3</td>
<td>Full-time education: eft</td>
</tr>
<tr>
<td>4</td>
<td>Job and full-time education: eftjb</td>
</tr>
<tr>
<td>5</td>
<td>Job and part-time education: eptjb</td>
</tr>
<tr>
<td>6</td>
<td>Unemployed: une</td>
</tr>
<tr>
<td>7</td>
<td>Not in the labour force: nlf</td>
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<tr>
<td>8</td>
<td>Missing: *</td>
</tr>
</tbody>
</table>

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State distribution for pre-GFC cohort

### Working

- **Job**
- **More than one job**
- **FT education**
- **Job & FT educ**
- **Job & PT educ**
- **Unemployed**
- **Not in labour force**

### Mixed

### Education
State distribution for post-GFC cohort

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Hierarchical cluster analysis for pre-GFC cohort

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The youth labour market
### Selected findings: duration in labour market states (months)

<table>
<thead>
<tr>
<th>Categories</th>
<th>jb</th>
<th>jbs</th>
<th>eft</th>
<th>eftjb</th>
<th>eptjb</th>
<th>une</th>
<th>nlf</th>
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<td>14.3</td>
<td>9.9</td>
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<td>1.3</td>
<td>25.4</td>
<td>11.0</td>
<td>6.8</td>
<td>9.1</td>
<td>6.3</td>
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<tr>
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<td>1.8</td>
<td>9.4</td>
<td>53.8</td>
<td>3.9</td>
<td>3.4</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>POST-GFC COHORT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Working</td>
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<td>2.7</td>
<td>3.3</td>
<td>13.1</td>
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<td>49.2</td>
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<td>4.8</td>
<td>1.2</td>
</tr>
</tbody>
</table>

*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 (%)

<table>
<thead>
<tr>
<th>Destination</th>
<th>Work</th>
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<th>Educ</th>
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<td><strong>PRE-GFC COHORT</strong></td>
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<tr>
<td>Employed FT</td>
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<td>63</td>
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<td>Employed PT</td>
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<td>20</td>
<td>34</td>
<td>19</td>
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<tr>
<td>Unemployed</td>
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<td>8</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>NILF marg attach</td>
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<td>10</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>NILF not marg att</td>
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<td>11</td>
<td>1</td>
<td>6</td>
</tr>
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<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td><strong>POST-GFC COHORT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed FT</td>
<td>60</td>
<td>28</td>
<td>52</td>
<td>47</td>
</tr>
<tr>
<td>Employed PT</td>
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<td>39</td>
<td>31</td>
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<tr>
<td>Unemployed</td>
<td>9</td>
<td>15</td>
<td>2</td>
<td>9</td>
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<tr>
<td>NILF marg attach</td>
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<td>8</td>
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<tr>
<td>NILF not marg att</td>
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<td>14</td>
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<td>6</td>
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<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
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</tbody>
</table>
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
R library TraMineR, with a range of functions, and a comprehensive user guide:


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: