

# Graduate Labor Economics

## Lecture 16: Unlucky Cohorts

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# Today's lecture

- School-to-work transition
- Two forms of bad luck:
  - Cohort-crowding (Bound & Turner 2007, Morin 2015)
  - Graduating in a recession (Kahn 2010, Oreopoulos et al. 2012)

# The school-to-work transition

- Labor market entry is a key moment in a worker's career
  - Access to desired occupation/industry
  - Access to on-the-job training
  - Learning about one's abilities/interests
- Job mobility plays a crucial role (Topel and Ward 1992)
  - Typical (male) worker holds 7 jobs in first 10 years
  - Job changes account for 1/3 of early wage growth
- Successful entry facilitates other life-cycle goals
  - Family formation
  - Homeownership

# Too many jobseekers, not enough jobs

- Hiring rate depends on tightness ( $\theta \equiv \frac{\text{vacancies}}{\text{unemployed}}$ )
  - Hard to get a job during a recession (few vacancies)
  - Hard if you're in a crowded cohort (many jobseekers)
- Why are new entrants more “exposed” than incumbents?
  - Easier to keep a job than to find it in the first place
  - Wages are flexible for new hires, more rigid for incumbents
  - Imperfect substitutability across age/experience groups
- Why might initial conditions have permanent effects?
  - Search costs rise with age (specific human capital, house, family)
  - Early adulthood is a “window of opportunity” to find a good job

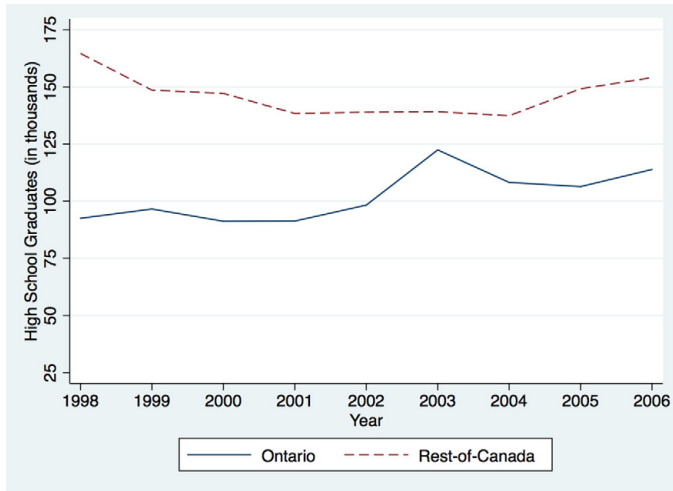
## Cohort-crowding: natural and unnatural variation

- How, and through what channels, do changes in the size of entering cohorts affect their employment and earnings?
- Variation in cohort size/makeup often reflects long-term trends
  - Baby booms and busts
  - Rising female labor supply
  - Rising collegiate attainment
- Challenge: hard to disentangle from other time trends
- Alternative: short-term, policy-induced shocks
  - Educational reforms
  - Conscription policy

# Ontario's 1997 high school reform

- Ontario compressed HS curriculum from 5 years to 4
  - Implemented in 1997
  - Goal: cut costs, align Ontario with rest of Canada
  - Side effect: “double cohort” in 2003
- Germany enacted similar reforms in 2000s (Büttner & Thomsen 2015, Huebener & Marcus 2017, Meyer & Thomsen 2016)
- Generates cohort-crowding in the entry-level labor market

## Ontario's "double" cohort: 34% growth relative to 2001



(Morin 2015, Figure 1)

# Data

- 2001 and 2006 Canadian Census
  - 20 percent sample of Canadian households
  - Labor force status, weeks worked, earnings, occupation
  - Year of birth (Ontario schools use 12/31 birthday cutoff)
  - Sex, education, province of residence (now, 1, and 5 years ago)
- (December) 2001 and 2003 Labour Force Surveys
  - Smaller samples
  - Observe double cohort shortly after graduation
  - Observe hourly wages



# Evolution of wages in Ontario and rest of Canada

Average weekly wages of full-time, full-year workers (census data).

Weekly wages	Ontario			Rest of Canada		
	2000	2005	Difference	2000	2005	Difference
Youth	438.46 (206.44) [2215]	402.18 (182.82) [2110]	− 8.3%***	398.25 (202.70) [3590]	413.20 (212.56) [4095]	3.8%***
Aged 26–30	664.47 (373.34) [15,965]	631.09 (318.64) [15,445]	− 5.0%***	604.11 (333.48) [19,440]	600.48 (332.59) [21,520]	− 0.6%
Aged 31–35	765.47 (793.31) [19,265]	747.75 (579.72) [16,685]	− 2.3%**	678.25 (614.26) [24,490]	709.61 (833.56) [21,730]	4.6%***
Aged 36–40	821.15 (607.97) [24,050]	811.05 (775.26) [21,150]	− 1.2%	720.55 (456.75) [33,495]	744.63 (660.62) [26,345]	3.3%***
Aged 41–45	867.01 (885.60) [24,465]	861.18 (906.62) [27,525]	− 0.7%	763.25 (844.92) [37,215]	773.47 (617.92) [36,930]	1.3%*
Aged 46–50	885.23 (710.25) [20,110]	902.78 (976.62) [25,480]	2.0%**	781.69 (566.68) [30,805]	816.96 (956.13) [37,535]	4.5%***

(Morin 2015, Table 1)

# Discussion

- What are the strengths of this paper?
- What are its limitations?
- What other questions could one explore with this variation?

## Oreopoulos, von Wachter, and Heisz (2012)

*Increasing evidence suggests that adverse initial labor market conditions can have substantial long-term effects on the earnings of college graduates. This suggests that some cohorts may earn substantially lower returns on their investment into higher education than others. College graduates from less prestigious colleges or majors, who might have received less training or might be of lower ability, are particularly at risk from early career interruptions. **Yet, the overall magnitude and heterogeneity of these persistent losses is currently unknown**, partly because of a lack of longitudinal data on a sufficient number of cohorts and detailed information on educational background. Similarly, **little is known about the sources of persistent reductions in earnings**. Yet, an understanding of the mechanisms leading to persistent effects of initial labor market conditions is a key step in devising policy options to assist young workers and in helping to prevent prolonged stagnation in the earnings and careers of “unlucky” cohorts.*

# Data and design

- Linked university-employer-employee data
  - 70 percent of Canadian university students for 1976–1995 (institution, degree type, major, date of graduation)
  - Income tax and payroll records for 1982–1999 (annual earnings, province of residence, employer IDs)
  - Men only: no reason given in paper (??)
- Aggregate to cohort ( $c$ )  $\times$  initial region ( $r$ )  $\times$  year ( $t$ ) cells
- Baseline specification:

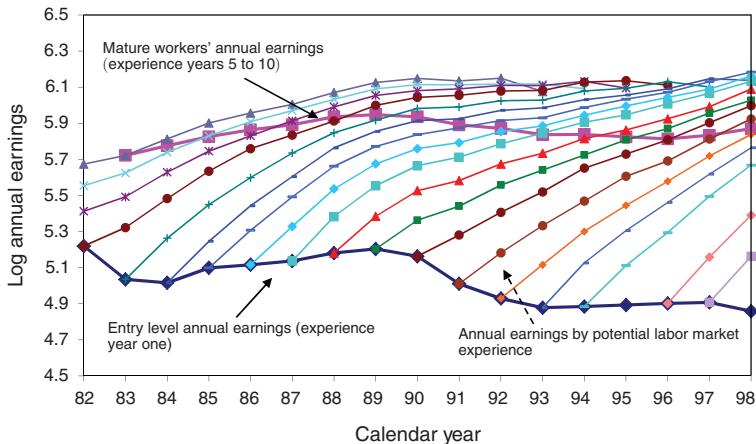
$$\bar{y}_{crt} = \alpha + \beta_e UR_{cr0} + \phi_t + \theta_r + \gamma_e + \xi_c + u_{crt}$$

- Mixes effects of initial and subsequent adverse conditions:

$$p \lim \hat{\beta}_{e,0} = \beta_{e,0} + \sum_{d=1}^e \beta_{e,d} \frac{\text{Cov}(UR_{cr0}, UR_{cr_d})}{\text{Var}(UR_{cr0})}$$

# Cohort-specific experience profiles

(I love this figure)



(Oreopoulos et al. 2012, Figure 1A)

# Gradual catch-up of earnings

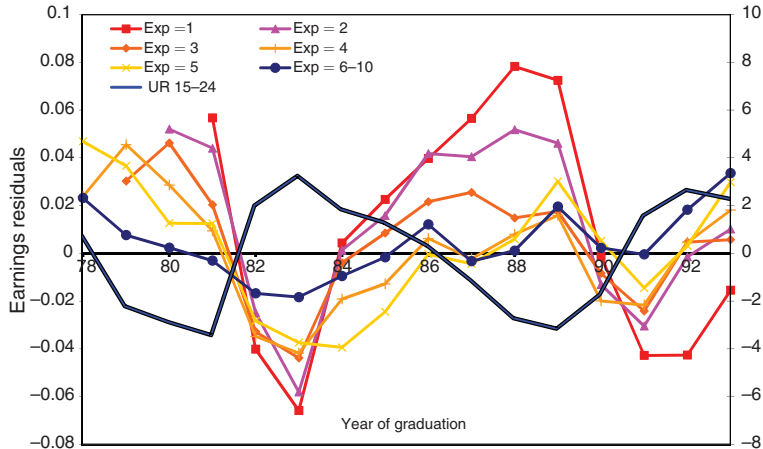
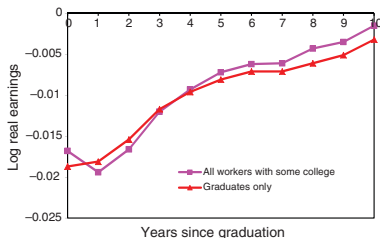


FIGURE 1B. EARNINGS BY EXPERIENCE YEAR FOR COHORTS ENTERING LABOR MARKET 1978-1993

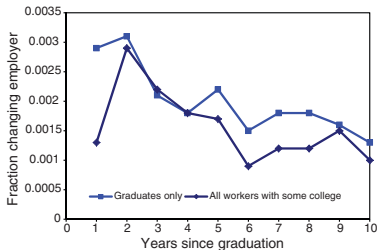
(Oreopoulos et al. 2012, Figure 1B)

# Mechanisms

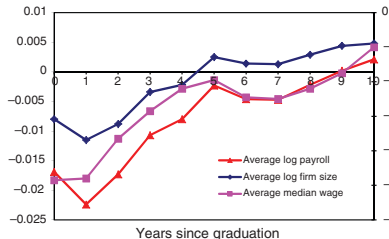
Panel A. Log real annual earnings



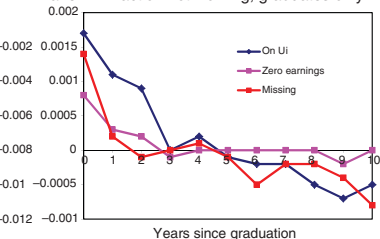
Panel B. Probability of annual change in employers



Panel C. Average firm "Quality", graduates only

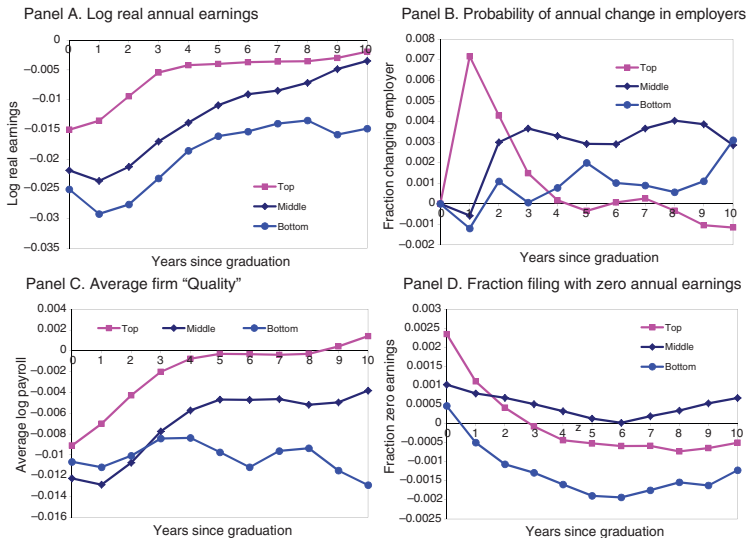


Panel D. Fraction not working, graduates only



(Oreopoulos et al. 2012, Figure 2)

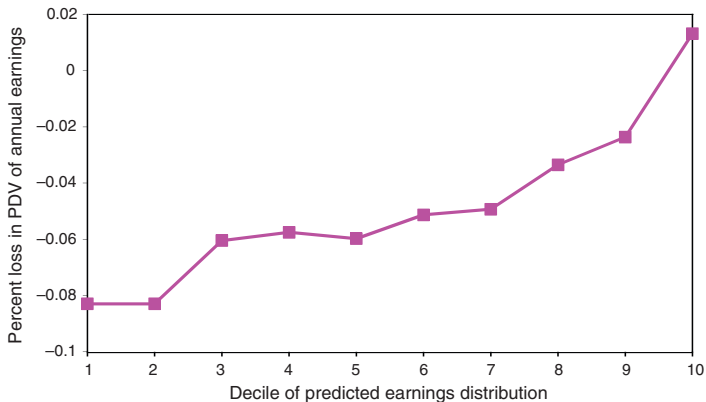
# Effects vary by predicted earnings



(Oreopoulos et al. 2012, Figure 4)



## Cumulative earnings losses are monotonic in skill



(Oreopoulos et al. 2012, Figure 5)

# Open questions?

- Surely lots of interesting questions remain
  - Other aspects of earnings recovery
  - Other populations
  - Other outcomes
- Can we think of some?