Initial Industry Choices and Long-Term Growth in Earnings

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Motivation

- Industries differ in prevailing wages, size of firms, potential for learning, nature of the product, types of tasks required
  - Workers may gain industry and firm specific skills
  - Industry success may affect bargaining power of incumbent workers
- Initial labor market circumstances may matter
  - Entering the labor market during a recession influences long term earnings
  - Initial jobs at large firms or higher paying firms influence future outcomes
  - But unemployment in early life does not appear to have long run effects
- Job displacements have long lasting effects on earnings
- Negative impacts are often larger for low-skill workers

What We Do

- Examine earnings growth of workers over 10 years in the National Longitudinal Surveys of 1966, 1979, and 1997 (20 years for 1997)
- Compare wage growth over period to employment growth in youth's initial industry of employment
- Examine how much of this relationship can be explained by predetermined observables
  - NLS's collect measures of ability and skills through testing as well as detailed information on family background
- Test whether effects differ by time in initial industry and based on type so tasks and off-shorability (across occupations)

Data and Sample

- Male workers not initially employed in agricultural or armed forces
- Declare industry within 7 years of initial full time employment (30 hrs/wk)
- Calculate wage growth and initial industry employment growth based on year observing first industry
  - Three survey moving average to measure earnings at beginning and end
  - Use Current Employment Statistics establishment payroll survey of BLS
- Include individual components of ASVAB and measures of non-cognitive skills for 79 and 97
- Controlling for Family income
  - Excludes youth income
  - Omit if youth does not live with parents/guardians in wave 1, and then if not allow for greater influence of paternal education

Table 2: Growth in earnings 10 years after industry entry

1966 cohort:				
Growth in industry employment	0.816***	0.384***	0.396***	0.375***
	(0.166)	(0.123)	(0.114)	(0.109)
Observations	3,002	3,002	3,002	3,002
R-squared	0.285	0.389	0.400	0.403
1979 cohort:				
Growth in industry employment	0.815***	0.513***	0.517***	0.515***
	(0.144)	(0.108)	(0.104)	(0.105)
Observations	4,305	4,305	4,305	4,305
R-squared	0.105	0.223	0.236	0.240
1997 cohort:				
Growth in industry employment	0.969***	0.576***	0.562***	0.584***
	(0.241)	(0.129)	(0.137)	(0.142)
Observations	1,638	1,638	1,638	1,638
R-squared	0.147	0.276	0.284	0.286
Age-at-first-survey x Entry-Year FE	YES	YES	YES	YES
All demographic + education variables		YES	YES	YES
All family background variables			YES	YES
Initial Region FE				YES

Additional Analyses

- One s.d. change in employment growth implies changes in earnings of 5.7% of s.d. for 66, 8.7% for 79, 7.4% for 97 (less volatility for 97)
- Restrict sample to youth who declare an industry within two years of full time labor market entry – Results robust
- Base initial labor market entry upon completing any initial spell of higher education – Results robust, but effects in 97 22% larger
- Similar results 1979 over 20 years – Point estimate smaller, but more variation in employment growth so standardized effect same

Falsification Test
Future Employment Growth for NLSY 1979

Avg. real earnings: 10 years after entry	1	2
Industry employment growth in the next 10 years	0.00130	-0.111
	(0.127)	(0.124)
Constant	7.007***	6.734***
	(0.0279)	(0.256)
Observations	4,308	4,308
R-squared	0.085	0.341
Age-at-first-survey x Entry-Year FE	YES	YES
All demographic + education variables		YES
All family background variables		YES
Initial Region FE		YES

Table 7: Explaining growth in earnings by worker persistence in initial industry

Growth in (log) average real earnings (10 yrs.)	Worker persisted for at least 5 years	Worker did not persist for 5 years
1966 cohort:		
Growth in industry employment (10 yrs.)	0.491***	0.336**
	(0.158)	(0.145)
Observations	979	2,023
R-squared	0.414	0.398
1979 cohort:		
Growth in industry employment (10 yrs.)	0.496***	0.510***
	(0.139)	(0.118)
Observations	1,071	3,234
R-squared	0.395	0.237
1997 cohort:		
Growth in industry employment (10 yrs.)	0.447	0.690***
	(0.403)	(0.212)
Observations	413	1,225
R-squared	0.329	0.306

Table 8: Explaining growth in earnings by offshorability factor of initial occupation

Growth in (log) average real earnings (10 yrs.)	Above median offshorability	Below median offshorability
1966 cohort:		
Growth in industry employment (10 yrs.)	0.509***	0.0680
	(0.117)	(0.178)
Observations	1,682	1,290
R-squared	0.421	0.428
1979 cohort:		
Growth in industry employment (10 yrs.)	0.479***	0.567***
	(0.110)	(0.162)
Observations	2,172	2,128
R-squared	0.274	0.258
1997 cohort:		
Growth in industry employment (10 yrs.)	0.614**	0.425*
	(0.263)	(0.214)
Observations	847	783
R-squared	0.315	0.340

Table 9: Explaining growth in earnings by tasks in initial occupation

1966 Cohort	Share Abstract	Share Routine	Share Manual
Growth in (log) average real earnings (10 yrs)	Above median	Above median	Above median
Growth in industry employment (10 yrs)	0.436***	0.633***	0.474***
	(0.144)	(0.123)	(0.121)
Observations	1,458	1,466	1,297
	Below median	Below median	Below median
Growth in industry employment (10 yrs)	0.457***	0.0485	0.320*
	(0.102)	(0.169)	(0.169)
Observations	1,544	1,536	1,705
1997 Cohort	Share Abstract	Share Routine	Share Manual
Growth in (log) average real earnings (10 yrs)	Above median	Above median	Above median
Growth in industry employment (10 yrs)	0.731**	0.419	0.483**
	(0.297)	(0.280)	(0.230)
Observations	882	775	794
	Below median	Below median	Below median
Growth in industry employment (10 yrs)	0.565**	0.883**	0.520*
	(0.255)	(0.319)	(0.287)
Observations	756	863	844

Conclusion

- Employment growth in initial industry strongly correlated with worker's wage growth
  - Over half of effect associated with individual skills and attributes
  - Remaining effect estimates are very stable to controls for family background
- Results robust to alternative definitions of initial industry, longer time frame for NLSY 97, pass falsification on future employment growth
- Similar estimates regardless of time spent in industry
- Larger effects in off-shorable and more routine task occupations in NLS 1966
  - Possible reversal w/ larger effects in less routine for NLSY 1997 (but noisy)