

Generations of Jobs? Workplace Task Change over the Lifecycle and Across Cohorts

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Motivation

3 stylized facts motivate this project:

- U.S. workforce aging fast & the proportion of older workers will increase in the future
- As people age, all cognitive abilities decline, but crystallized abilities suffer less than fluid
- Younger cohorts have been able to prolong fluid abilities longer into their life spans

We also know that demand for cognitive abilities, especially fluid ones, has increased over time

So...

- How has aging and ability upgrading of successive cohorts affected the overall task composition of the US workforce?
- Do older workers specialize in crystallized-ability intensive jobs?
- Controlling for changing labor demand, have older workers become less specialized in crystallized abilities?

Crystallized versus Fluid Abilities

- Crystallized: comes from prior learning & experiences— information is locked in and continues to grow in adulthood
 - Examples from DOT: verbal, GED, numerical
- Fluid: think & reason abstractly & solve problems independently of past knowledge
 - Examples from DOT: spatial & form perception

Data

- Individual Information
 - US decennial censuses 1940-2000
- Task data
 - 1949 Dictionary of Occupational Titles* (same as previous presentation)
 - Subsequent editions: 1965, 1977, 1991
- Captures a lot of information about workplace tasks 1940-2000:
 - within occupation changes (to some extent)
 - new occupations

Data Issues

- A few things need to be teased out as we go forward:
 - to what extent were jobs re-evaluated at each edition of DOT?
 - Do changes in ratings within occupations reflect actual job changes or changing rating methods?
 - are the definitions and rating methods really consistent across years?
 - are all sectors of the economy represented in each dataset?
 - are the matching methodologies similar enough across years?

A Look at Some Trends

%change	Strength	Working Outside	Spatial Perception	Form Perception	GED	Numerical
1940-1950 <35	-0.9	-16	6.6	4.4	4.3	4.3
1940-1950 35-50	-1.7	-16	2.8	2.8	1.4	3.1
1940-1950 >50	-1.5	-23	.8	1.4	-1.1	1.1
1950-1970 <35	-7.6	-33	9	1.7		-3.5
1950-1970 35-50	-6.9	-28	7.2	3.3		-3.4
1950-1970 >50	-4.8	-34	7.6	3.6		-2.3

And levels...

- The older worker group tends to rate higher on crystallized tasks, and sometimes higher on fluid abilities too, but the difference is smaller in that case (for 1970 sample, they do rate strictly lower on the fluid tasks and higher for crystallized).