

# Health Shocks and Occupational Mobility

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# Motivation

## Aims:

1. Construct a model to study the importance of health shocks for occupational choice, occupational mobility and labor market entry/exit
2. Use the model to study the effects of employment protection policy, employer health insurance, disability insurance and government skill training programs on labor force participation decisions and occupational choices
3. Study the effects of rapid population aging on occupational mobility related to health shocks
4. Better understand the relationship between health and income

# Motivation

- Occupational mobility has increased in the U.S. (Kambourov and Manovskii (2008))
- Returns to occupational tenure are substantial (Kambourov and Manovskii (2009))
- The set of occupational skill requirements is the most important source of human capital specificity, not occupations (Polataev and Robinson (2008))
- Involuntary occupation movers typically experience downward shifts in skill requirements (Robinson (2010))

# Previous Literature

## 1. Occupational Choice:

- Keane and Wolpin (1997); Cropper (1977); Dan (2010)

## 2. Occupational Mobility:

- Kambourov and Manovskii (2008, 2009); Polataev and Robinson (2008)

## 3. Occupational characteristics and Health:

- Case and Deaton (2005); Fletcher et al. (2011); Kelly et al. (2011); Fang and Gavazza (2011)

# Data

- Panel Study of Income Dynamics (PSID)
- The Dictionary of Occupational Titles (DOT)
- Current Population Survey (CPS)

# The Dictionary of Occupational Titles

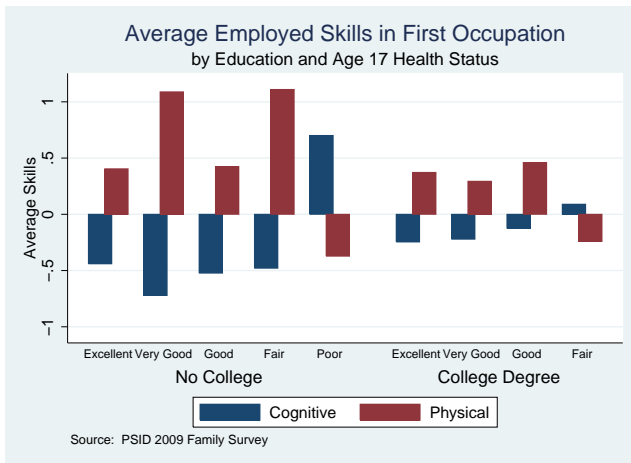
- Information on 12,741 detailed occupations
- Occupation characteristics:
  - Degree of interaction with Data, People and Things
  - General Educational Development level and Specific Vocational Preparation
  - Physical Demands and Environmental Conditions
  - Aptitudes, Temperaments
  - Materials, Products, Subject Matter and Services related to the job.
- Combine relevant occupation characteristics to create *physical* and *cognitive* skill measures
- Match the occupation characteristics from the DOT to occupations held by workers in the PSID and CPS

# Aims

- Study relationship between health early in life and initial occupational choice
- Study occupational decisions following health shocks
  - how does the type of occupation held affect the probabilities of (1) staying in the same occupation, (2) switching occupation, (3) exiting the labor force
  - how does the presence of Employer Health Insurance affect decisions
  - study both the short run and long run effects of health shocks
- Study patterns in employed skills following health shocks
- Study differences between government and non-government jobs

# Health and First Occupation

**Figure:** Average Employed Skills in First Occupation





# Health and Occupation Entered

**Table:** Average Employed Skills in Occupation Entered from Unemployment

	Non-College		College	
Health	Cognitive	Physical	Cognitive	Physical
Good	-.63	.49	.57	-.30
Average	-.70	.50	.40	-.22
Poor	-.73	.55	.18	-.05

# Selection in Occupations

- Initial occupation: bad health is associated with occupations that are relatively more intensive in cognitive skills
- At young ages (30-40 yo): only the college educated enter into occupations relatively intensive in cognitive skills if in bad health
- At old ages (50-60 yo): all workers in bad health enter into occupations relatively intensive in physical skills

# Exit from the Labor Force due to Illness

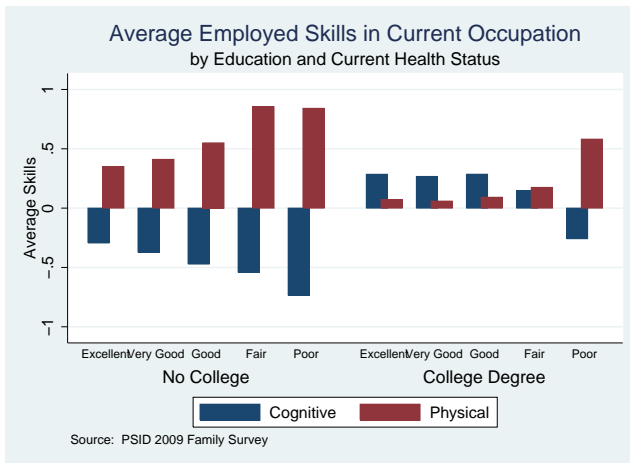
**Table:** Occupational Characteristics of Disabled Workers who Quit and Do Not Quit due to Illness

	Non-College		College	
	Cognitive	Physical	Cognitive	Physical
<b>Quit</b>	-.64	.64	.64	-.33
<b>Do Not Quit</b>	-.53	.68	.83	-.39

- Disabled workers quit occupations relatively intensive in physical skills, and more so at older ages

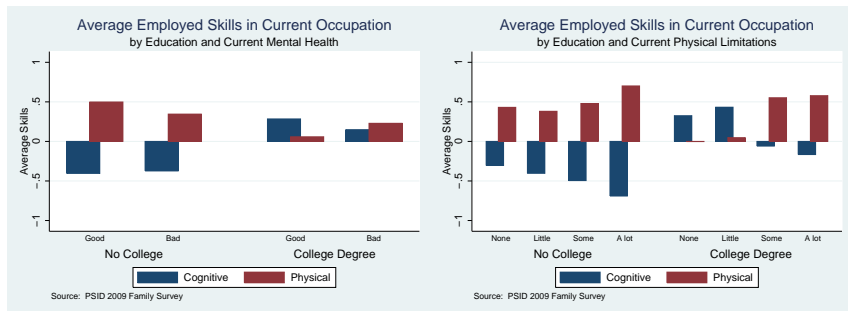
# Type of Current Occupation and Health

Figure: Average Employed Skills in Current Occupation



# Health and Current Occupation

**Figure:** Average Employed Skills in Current Occupation, By Physical and Mental Health



# Occupational Mobility and Health

**Table:** Percentage of Workers who Change Occupations, by Health

Health	Non-college	College
Good	10.4	8.2
Average	10.0	10.2
Poor	16.6	12.6

# Occupational Characteristics of Workers who Change Occupations, by Health

Table: Old Occupations

	Non-college		College	
Health	Cognitive	Physical	Cognitive	Physical
Good	-0.58	0.64	0.59	-0.33
Average	-0.66	0.65	0.56	-0.26
Poor	-0.76	0.75	0.23	0.08

Table: New Occupations

	Non-college		College	
Health	Cognitive	Physical	Cognitive	Physical
Good	-0.58	0.66	0.65	-0.37
Average	-0.67	0.67	0.56	-0.28
Poor	-0.71	0.6	0.36	-0.2

# Occupational Characteristics of Workers who Change and Do Not Change Occupations, by Health

**Table:** Old Occupation (if change occupation)

	Non-college		College	
Health	Cognitive	Physical	Cognitive	Physical
Good	-0.58	0.64	0.59	-0.33
Average	-0.66	0.65	0.56	-0.26
Poor	-0.76	0.75	0.23	0.08

**Table:** Old/Current Occupation (no change in occupation)

	Non-college		College	
Health	Cognitive	Physical	Cognitive	Physical
Good	-0.5	0.66	0.91	-0.48
Average	-0.61	0.68	0.75	-0.41
Poor	-0.57	0.52	0.61	-0.37



# Dynamic Models of Occupational Choice and Skill Accumulation

- Lazear (2009)
- Gathmann and Schonberg (2010)
- Phelan (2010)
- Yamaguchi (2010)
- Imai et al. (2011)

# Main Features

- Occupations are characterized by physical and cognitive skill requirements
- Individuals make initial occupational choices based initial health and skill endowments
- 2 types of adverse health shocks: physical and mental
- Probability of each health shock depends on occupational skill requirements
- Shocks may lead to a mismatch between workers' skills and occupational requirements
- Lower productivity or complete inability to perform in the current occupation
- Individual decisions: (1) stay in current occupation; (2) change occupation; (3) labor market exit/entry

## Conclusion

- Preliminary evidence indicates that young workers in bad health optimally select into occupations intensive in cognitive skills, but older workers in bad health enter occupations relatively intensive in physical skills
- Disabled workers are more likely to quit if their occupations are relatively intensive in physical skills
- On aggregate, worse health status is associated with occupations requiring higher levels of physical skills and lower levels of cognitive skills
- Workers in bad health are significantly more likely to change their occupation
  - those who change occupations do so from relatively physically intensive occupations compared with those who do not change.
  - they enter occupations much more intensive in cognitive skills compared to their old occupations
- Next steps: model and policy experiments