Discussion of Health and Human Capital by O'Mahony & Samek IARIW, Dresden, Germany, August 23, 2016



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Paper Objective

• To estimate the impact of health on earnings & retirement behavior

• Absenteeism & presenteeism

Caring responsibilities

Important because

- Reducing work productivity of the population
- May impact other workers besides work productivity of those targeted in this study

Research Approach

$\textbf{Health conditions} \rightarrow \textbf{Human Capital}$

- Through changes in mortality
- Through changes in morbidity by impacting on the labour force's productivity and its quantity supplied (Absenteeism and Presenteeism)
- Through changes in retirement age



General Methodology

- For the UK in 2014, uses a self-reported health Likert scale assessment (SAH) data set to create a health index (HI)
- Sets a cut-off point as those in poor health may justify behavior by overstating how poor their health is
 - Bottom 10 and 25 percent of the distribution
- Incorporates health status and caring into alternative J-F human capital stock estimates

Health Index

- Uses a standard pooled ordered probit with SAH data to estimate HI as a function of diagnosed diseases and health limitations with a broad range of socio-economic control variables
 - Women's HI higher
 - 10% cut point at relatively flat area of distribution
 - 25% cut point as distribution has begun to rise significantly

Health Index Comparison of SAH and Estimated HI



Data for HC stocks

- For ages 16 69 and by gender for all variables
 - Survival rates no other information
- Also by educational qualifications and health for
 - Earnings, employment, unemployment and retirement rates
 - Enrollment rates for education level
- Mincer style equation estimated with log of hourly wage rates for wage and salary workers by qualifications as a function of HI and some socioeconomic controls

Jorgenson-Fraumeni equations

- Recursive backwards
- Everyone retires by age 70
- Work only (no school) above age 34 LLI(s,a,e,h)=EMR(s,a,e)*Incomes(s,a,e,h)+ sr(s,older)*LLI(s,older,e,h)*R,

where $R=(1+g)/(1+\delta)$; g is the labor productivity growth rate (2%), r is the discount rate (3.5%) and sr = 0 for those aged 69

Jorgenson-Fraumeni equations

 Ages 16 through 34, work and school both possible LLI(s,a,e,h)=EMR(s,a,e)*Incomes(s,a,e,h)+ sr(s,older)*R*
[ENRR(s,a,e)*LLI(s,older,school,h)+ (1-ENRR(s,a,e)*LLI(s,older,e,h)]

 Another version of the J-F equations for those aged 50 through 69 includes health to estimate EMR(s,a,e,h)=
[1-RETR(s,a,e,h)-UNEMR(s,a,e)-Other(s,a,e)]

Employment Rate Versions

 Other versions of the J-F equations for those aged 50 through 69 add health, then care taking (c) to estimate EMR,

EMR(s,a,e,h,c)=

[1-RETR(s,a,e,h,c)-UNEMR(s,a,e)-Other(s,a,e)]

Retirement Probabilities

- With a pooled probit regression, as a function of
 - Respondent's own HI
 - Spouses health
 - Respondent's informal caring responsibilities of others,
 - With socio-economic controls
- Predicted retirement probabilities compared to those in good and poor health compared to avg. retirement probabilities across all individuals with the two cut-off points: 10% (poor health) and 25% (fair health)

Results – Wages Only

- For health effect on wages only, 2% of total employed (for each gender too) HC stocks (HCS) is contributed by individuals in poor health in 2014
- Inclusion of fair health increases estimates to 8% for males and 11% for females
- If everyone's poor health rose to good health, overall HCS impact is 3.5%
- Rises to 10% if fair health individuals rose to good health as well

Results

- Note that employed women on average have a 33% lower HCS than males
- Compared to poor health employed individuals, the overall employed average HCS per capita including health and its retirement effect is:
 - 2.79 times higher for males
 - 2.68 times higher for females

Results – Qualification Impact

- Poor health is associated with lower qualification levels
- For counterfactual, poor health people need to be redistributed across all qualification levels
- Controlling for qualification effect, average HCS per capita for a healthy person compared to a person in fair or poor health is 2.22 for men and 2.10 for women

Results - Caring

- Caring for others reduces an individual's HCS regardless of their health status
- Impact of caring has a bigger effect on female HCS than male HCS as they do more caring work
- Men's HCS is more affected by their own status while women's is affected by poor health of others as reflected in their caring duties

Discussion

- Much more to this paper than I presented here:
 - Very nice discussion of literature and possible circumstances
 - More results
- I don't do econometrics!

IWR 2014 Health Stocks

Not featured on par with their other wealth estimates

• 2017



Berndt & Others – Mental Health

- Some 15 years ago Berndt of MIT & others wrote about the effect of mental health on productivity in the US
- Clearly better for employers to cover mental health treatment than not

Discussion

- $R = (1 + g)/(1 + \delta)$ a bit high
- Here g=2%; δ=3.5%; R=.986
- J-F two versions
 - g=2%; δ=4%; R=.981
 - g=1.32%; δ=4.58%; R=.969
- g=2% is fairly high

Discussion

- Put 2% of total employed (for each gender too) HCS is contribution by individuals in poor health in context
- Include health in unemployment rate
- Mention possible "other type of job" effect sooner
- Do you know if unhealthy work part-time more often?

Excellent paper

• Enjoyed being forced to read it!