

The contribution of health to the economy in the European Union

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Overview

- Background/Motivation
- Economic benefits of health
 - Microeconomic
 - Macroeconomic
- Conclusions

Background bedtime reading



Suhrcke M, et al
The Contribution of Health to the Economy in the European Union. Brussels: European Commission, 2005.

Available on the European Commission website



WHO European Ministerial
Conference on Health Systems:
"HEALTH SYSTEMS,
HEALTH AND WEALTH"

Tallinn, Estonia, 25-27 June 2008

BACKGROUND DOCUMENT

The economic costs of ill health in the European Region

Marc Suhrcke, Regina Sauto Arce
Martin McKee and Lorenzo Rocco

Some take-up
of the “Health is Wealth” idea
at European level:



WHO European Ministerial
Conference on Health Systems:
"HEALTH SYSTEMS,
HEALTH AND WEALTH"

Tallinn, Estonia, 25-27 June 2008



EUROPE

The Tallinn Charter: Health Systems for Health and Wealth

EU Health Strategy

“Together for Health: A Strategic Approach for the EU 2008-2013”

- Fundamental principles for EC action on health:
 - 1) A STRATEGY BASED ON SHARED HEALTH VALUES
 - 2) **"HEALTH IS THE GREATEST WEALTH"**
 - 3) HEALTH IN ALL POLICIES (HIAP)
 - 4) STRENGTHENING THE EU'S VOICE IN GLOBAL HEALTH

...but, looking back critically, what *really* is behind the **Health is Wealth** story?

- The economic consequences of health depend on:
 - What precisely we mean by economic consequences /costs, and
 - How we measure them
- Demonstrating the economic benefits of health by itself is not the complete economic argument

What type of “economic benefits” of health are out there?

1) Health care cost savings?

2) Productivity benefits

a) **Microeconomic: benefits to the individual**

b) **Macroeconomic: benefits to the economy**

3) “Welfare” benefits

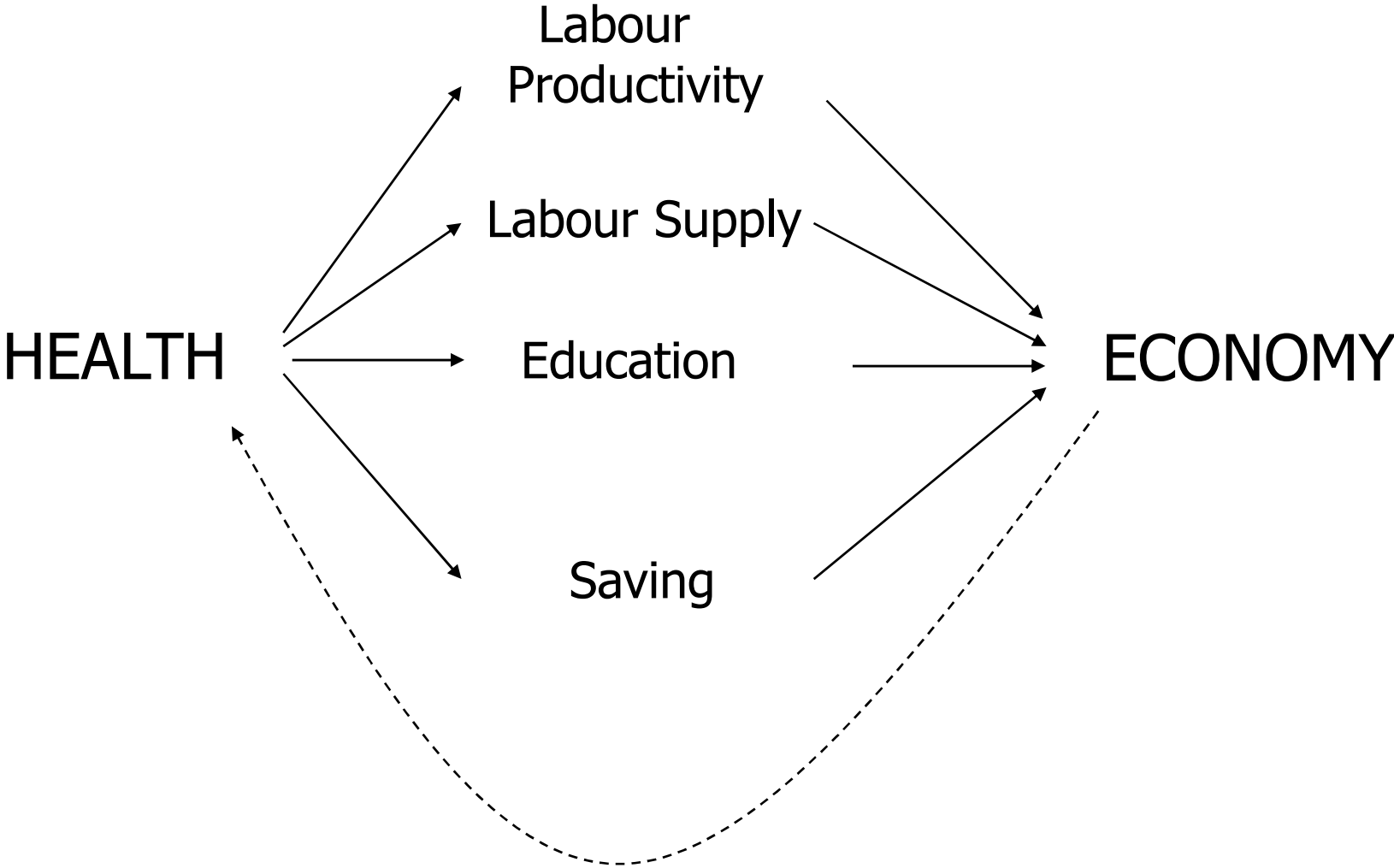
Productivity benefits

a) Microeconomic

b) Macroeconomic

- A more relevant economic benefit category than health care cost-savings...
- ...but challenging to assess empirically
(→ causality?)

Relevant channels from health to the economy: a simple framework



**a) Microeconomic benefits:
what economic gain to the individual?**

The impact of health on wages and earnings

- Poor health negatively impacts on wages and earnings
- Physiological proxies for health (height/ BMI) also associated with higher earnings (although possibly due to social meaning of these measures)

The impact of health on labour supply

- Good health increases probability of participating in labour force
- Good health reduces probability of early retirement
- Health impacts on carers
 - Men caring for sick wives likely to leave labour force
 - Women caring for sick husbands more likely to join labour force

Impact of health on education

- Human capital theory predicts that more educated individuals will be more productive, and obtain higher earnings
- Children with better health will have less absenteeism and lower dropout rate
- This is confirmed in low income countries
- Little work in high and middle-income countries

Impact of health on savings

- Theory predicts that improved health will increase savings
- Individuals have greater probability of reaching retirement
- This is confirmed in low income countries
- Insufficient evidence from high and middle-income countries

Examples of microeconomic benefits/costs

Wages and earnings

- Chronic disease (US):
Men earn 5.6% less; women earn 8.9% less
- Tobacco use (Netherlands): Wages 10% lower
- Obesity (US):
Wages reduced by US\$0.71 per hour

Labour supply

- Chronic disease (Ireland):
Men 66% less likely to work;
women 42% less likely to work
- Diabetes:
People 2.1-fold less likely to work

A quantitative example: Health & retirement in Europe

- European Community Household panel, eight waves (1994-2001), nine EU countries (older workers)
- Dependent variable: retirement
- Explanatory variables:
 - Health stock
 - Health shock
 - Income / wealth, education, demographics (gender, cohabit, children at home)

A one-unit change in the health measure leads to a change in the probability to retire by x% (pooled results):

	Self-report retirement	Retirement (broad)
Health <u>stock</u>	-13%	-17%
<i>Health <u>shock</u>:</i>		
small	0%	+14%
medium	+44%	+50%
large	+47%	+106%

Source: Hagan/Jones/Rice 2006

Systematic review of micro labour market studies (1995-2007)

Country	Number of studies with focus on that country (or group of countries)
US	29
UK	7
Australia	4
Canada	4
Finland	3
Spain	2
Denmark, Ireland, Pakistan, Cote d'Ivoire, Ghana, Brazil, China, Bulgaria, Germany, Netherlands, EU-9, France	1 each

Source: Suhrcke & Rocco 2008

**b) Macroeconomic benefits:
what benefit to the economy at large?**

The historical contribution of health to economic development

- Current levels of economic wealth in today's high-income countries are to a substantial degree explained by past achievements in health
- 30% of income growth in UK between 1780 and 1980 due to better health & nutrition (*Fogel, 1997*)
- Similar findings of past century in 10 industrialised countries (*Arora, 2001*)

Cross country studies on the impact of health on income levels or income growth

- Worldwide studies (including high-income countries)
 - Health enters as a very robust – indeed one of the most robust – predictors of income and growth
 - In some cases, health appears more important than education
- High-income and middle-income countries only
 - Very few studies
 - Many use measures of health that fail to discriminate between high income countries
 - Serious methodological challenges in assessing causal impact
 - Lower cardiovascular mortality shows substantial impact on economic growth in high income countries

A quantitative example: CVD and economic growth

- 26 high-income countries
- 1960-2000 in 5-year intervals
- Dependent variable: per capita income
- Explanatory variables:
 - Initial income per capita
 - Secondary schooling
 - Openness of the economy
 - Health proxy:
cardiovascular disease mortality rate at working age

“A ten percent increase in CVD mortality rate among the working age population decreases the per capita income growth rate by about one percentage point.”

Source: Suhrcke/Urban 2009

Dep. income p.c.	GMM CVD endo- genous (1)	GMM CVD endo- genous (2)	GMM CVD exo- genous (3)	GMM CVD endo- genous (4)	GMM small sample correction (5)	OLS (6)	FE (7)
Lag income p.c.	0.77 ^{***} (24.75)	0.70 ^{***} (5.05)	0.52 ^{***} (5.58)	0.67 ^{***} (5.77)	0.54 ^{***} (3.11)	0.83 ^{***} (8.73)	0.51 ^{***} (3.93)
2 nd lag income p.c.	-	0.03 (0.24)	0.75 ^{***} (3.83)	0.49 ^{***} (2.88)	0.52 ^{***} (3.53)	0.32 ^{***} (2.77)	0.31 ^{**} (2.49)
3 rd lag income p.c.	-	-	-0.50 ^{***} (-3.07)	-0.37 ^{***} (-2.68)	-0.30 ^{***} (2.03)	- 0.28 ^{***} (-3.70)	-0.12 (-0.82)
Lagged Openness	0.03 (1.61)	0.04 ^{**} (2.49)	0.05 ^{***} (2.96)	0.04 ^{**} (2.38)	0.03 (1.47)	0.03 ^{***} (3.13)	0.08 (1.01)
Lag share of secondary schooling	0.00 (0.12)	0.10 ^{**} (2.49)	0.11 ^{***} (3.61)	0.09 ^{***} (3.06)	0.09 ^{**} (2.24)	0.04 [*] (1.91)	0.02 (0.80)
Lagged CVD	-0.10 ^{***} (-3.08)	-0.07 ^{**} (-2.41)	-0.07 ^{***} (2.57)	-0.08 ^{***} (3.31)	-0.09 ^{**} (2.20)	-0.03 (-1.38)	-0.10 ^{***} (-2.60)
Hansen-Test	0.99	0.99	0.96	0.99	0.99	-	-
AR1	0.00 ^{***}	0.00 ^{***}	0.01	0.00	0.03	-	-
AR2	0.01 ^{***}	0.01 ^{***}	0.09 [*]	0.99	0.98	-	-
# observations	164	164	141	143	143	143	143

Source: Suhrcke/Urban 2009

The potential for longevity gains to increase labour force participation and the working age population

- 1) What if “**working age**” – typically defined as age 15-64 – increased in line with longevity gains?
- 2) What if **labour force participation** rates increased in line with longevity gains?