

Health Economics

Ondřej Schneider

Charles University, Prague



March 17, 2020, Public Finance

Course schedule

▶ Syllabus

Week	Date	Topic	Chapters	Lecturer
1	Feb 18	Economic rationale for the government	1, 2, 3, 4, 5	Miroslav Palanský
2	Feb 25	Public budgets	10, 26, 27	Natalia Li
3	Mar 3	Inequality		Marek Šedivý
4	Mar 10	Old-age pensions		Ondřej Schneider
5	Mar 17	Health economics	12	Ondřej Schneider
6	Mar 24	Public choice theory	7, 8	Miroslav Palanský
7	Mar 31	Cost-benefit analysis	6, 10, 11	Petr Janský
8	Apr 7	Taxation, tax incidence	17, 18	Miroslav Palanský
9	Apr 14	Tax evasion	23, 24	Petr Janský
10	Apr 21	Corporate taxation	21, 25	Petr Janský
11	Apr 28	Optimal taxation, personal income taxation	19, 20, 22	Miroslav Palanský
12	May 5	Externalities	9	Miroslav Palanský
13	May 12	Public procurement		Miroslav Palanský

Today's lecture

Introduction

Demand for Health

Health Care Provision

Government Provision

Insurance



Health Care and Health Insurance

Health H is a consumption good and an investment good at the same time!

You want H , but you also need H to be able to do other things.

We all need $H > H_{MIN}$ If $H < H_{MIN}$, you are in trouble: no income, no fun.

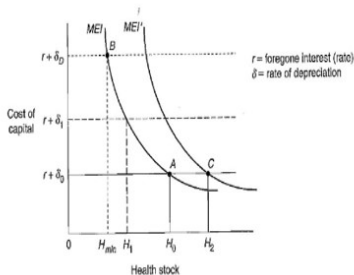
Health insurance is only one way to achieve Health, there are others (cash, taxes).

How much health do we demand?

Grossman model:

Demand for Health: Grossman Model

Grossman Model



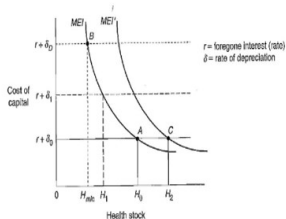
Marginal Efficiency of Investment (MEI) is downward sloping and convex - it has diminishing returns to investment.

You choose H_1 that reflects cost of investment.

Cost of $H = r + \delta$ where r is opportunity cost of your investment (typically of money) and δ is the rate of depreciation of your health.

Demand for Health: Grossman Model

Grossman Model



So far, very simple. What if $r = 0$? Optimal stock of H will rise (free health care) What if δ goes up (older people do have higher δ)? Optimal stock of H will fall (it still may take more health care to get there). What if people get more educated/smarter? Their MEI will shift to right (more efficient) - optimal stock of H will rise. So, Grossman model predicts that optimal H will rise if health care is cheaper (free), and if people are more educated.

Health Care provision

1) How do we get health care in order to maintain our Health H?

Market provision vs. Government provision

2) How do we pay for health care?

Cash - Insurance - Taxes

Market Health Care provision

Can markets provide health care?

Sure, why not.

Health care is NOT public good. (Clear? Non-rivalry and non-excludability...)

Can market provide health care efficiently?

That's another matter.

Market Health Care provision

Market failures:

1. Imperfect information: what am I buying?
2. Limited competition: who sells?
3. Adverse selection: young do not need it (pre-existing conditions...)
4. Moral hazard: if free, overconsumption; if I get it, I am less responsible.
5. Principal agent problem: patient-doctor-insurance company-government

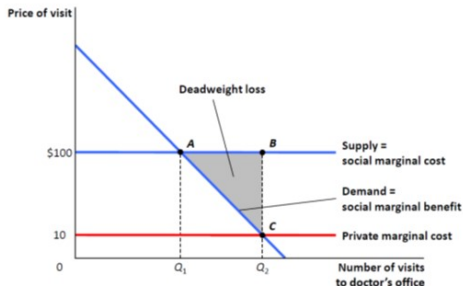
Moral Hazard

Moral Hazard Costs of Health Insurance for Patients ¹

No insurance: cost is \$100, quantity of health care is Q_1

Insurance and 10% copayment: cost is \$10, quantity rises to Q_2

There is deadweight loss of “unnecessary health care.”



Public Finance and Public Policy Jonathan Gruber Fourth Edition Copyright © 2012 Worth Publishers

Government Provision

4 main players:

- ▶ Clients – all people, not only patients
- ▶ Health care providers – doctors, hospitals
- ▶ Health insurance companies / funds / agencies –
- ▶ State

Different types of health sectors in Europe National health service (UK, Spain) – primarily state-organized and also state-run system, though private providers grow in importance in recent years

Social health insurance

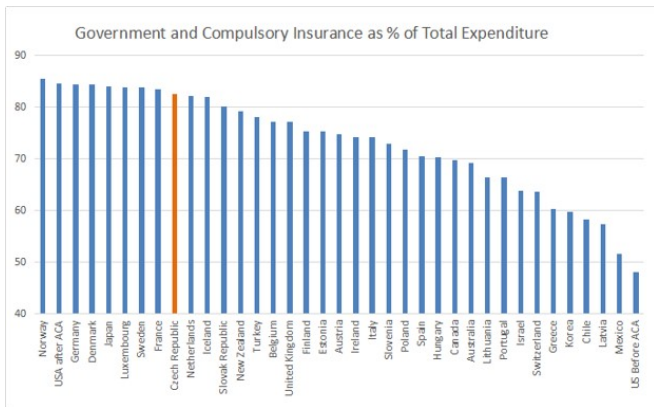
Only 1 insurer (Poland, Hungary,..)

More insurers (ČR, Slovakia, Germany,..)

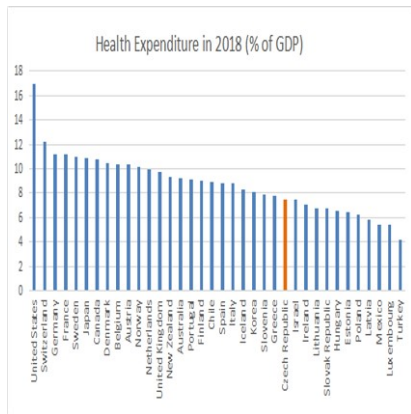
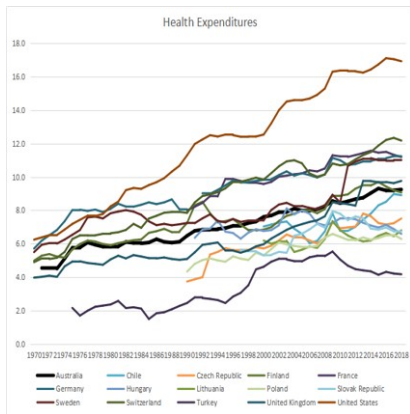
Government Provision

In many rich countries governments step in and either pay or mandate others to pay for health care.

OECD data: notice US before and after ACA

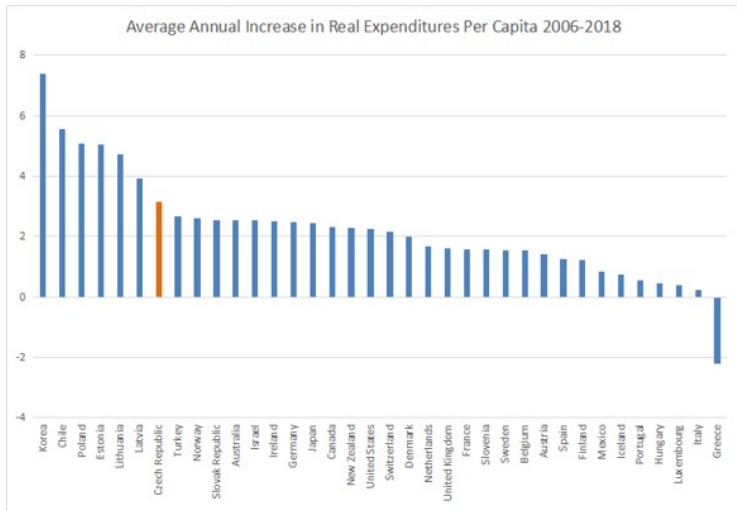


but it's not cheap...



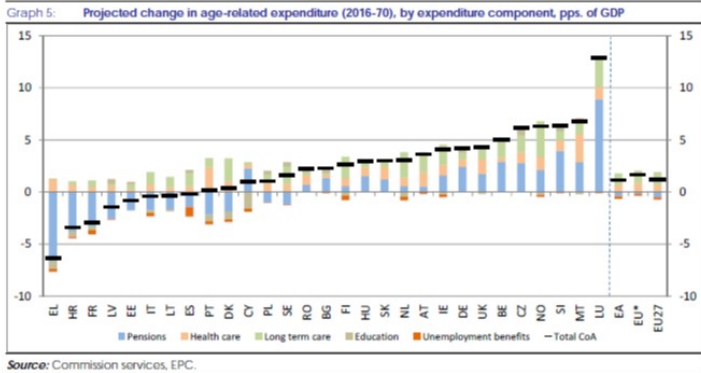
Expenditures rising fast

In real terms, health care expenditures are rising...



Expenditures rising fast

... and will keep rising fast (remember Grossman model!) Notice that health care diff is positive in all countries, unlike pensions, education or long term care.

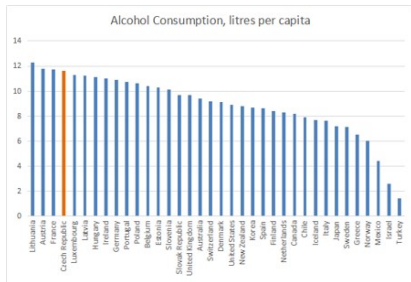
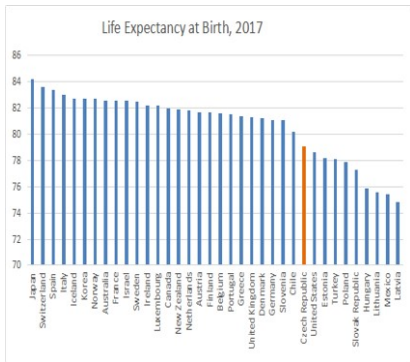


Efficiency?

Correlation (expenditures, life expectancy) is 0.46...

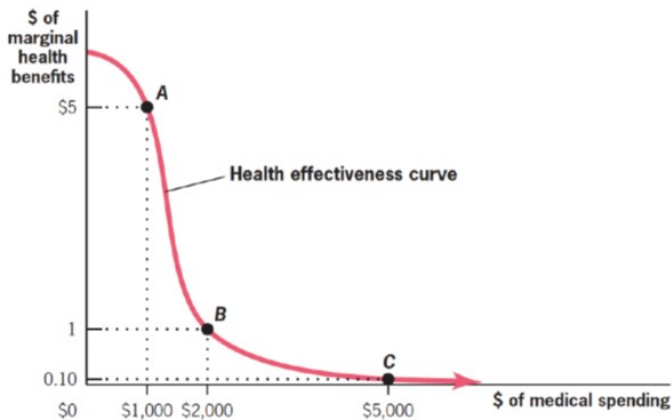
Correlation (alcohol consumption, life expectancy) is -0.008 ...

No idea what it means...



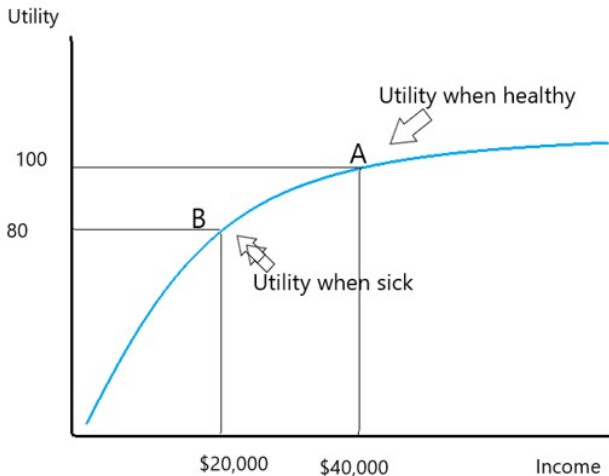
Efficiency?

The “Flat of the Curve”



Health Care Insurance: Consumers

Insurance = consumption smoothing



Health Care Insurance: Consumers

2 states: healthy and sick.

Individual doesn't know whether she will be sick or healthy

But she has a subjective probability of each event

She has an expected value of her utility in the coming year

Define: P_0 = prob. of being healthy

P_1 = prob. of being sick

$$P_0 + P_1 = 1$$

When "Healthy": Income \$40,000, utility 100

When "Sick": Income \$20,000, utility 80

Health Care Insurance: Consumers

With no insurance, the individual's expected utility for next year is:

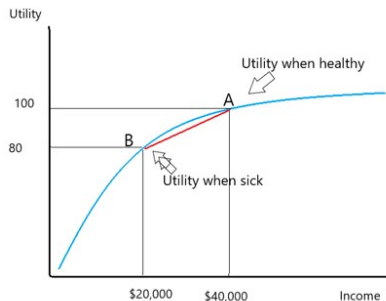
$$E(U) = P_0 * U(\$40,000) + P_1 * U(\$20,000) = P_0 * 100 + P_1 * 80$$

If $P_1 = 0.20$

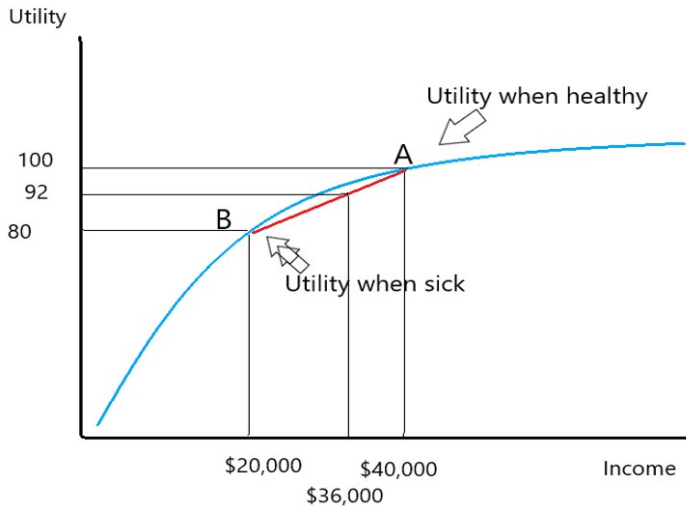
$$E(U) = 0.80 * 100 + 0.20 * 80 = 96$$

$$E(Y) = 0.80 * \$40,000 + 0.20 * \$20,000 = \$36,000$$

Without insurance, the consumer has an expected loss of \$4,000.



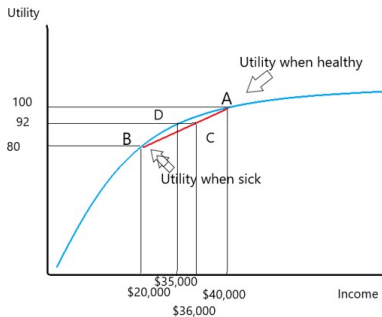
Health Care Insurance: Consumers



Health Care Insurance: Consumers

However, to get to the utility level 92, the individual would be willing to pay \$5,000

Paying \$5,000 to insurer leaves consumer with 92 utils, which equals $E(U)$ without insurance
The difference (\$1,000) is the insurance company profit



Demand for Insurance

- ▶ More insurance if price is lower. Competition will be between the price \$4,000 (true cost of insurance) and \$5,000 (maximum consumer is willing to pay to stay at the same utility as without insurance). [But competition is never perfect, as we already saw.]
- ▶ More insurance with rising risk aversion increases the demand for health insurance. Zero risk aversion = zero insurance.
- ▶ More insurance with higher probability of illness (adverse selection!)

Insurance: Provider

Payment for physician services is $P = \alpha + \beta * c$

α = fixed cost payment for a given diagnosis

β = payment for proportional costs c (tests, nurses)

Various methods of payment

1) Fee-for-service

$\alpha = 0 \quad \beta > 1$

No fixed payment for practice, but insurance company pays full cost of all visits to doctor plus a surcharge.

Leads to excessive care.

Insurance: Provider

2) $\alpha > 0$ $\beta = 1$

Payments for number and type of patients but not for services rendered.

Difficult to monitor, may lead to insufficient care.

Trend is towards $\alpha > 0$ $\beta = 1$: Diagnosis Related Groups (DRG) - patients sorted into groups, providers paid per diagnosis.

Conclusions

General accessibility to health care generally reached in Europe

- ▶ Health care part of service sector
- ▶ Health care a very sensitive political thing. . .

Pressure on healthcare finances mainly through:

- ▶ New medical technologies
- ▶ Population ageing
- ▶ Changing attitude of people towards own health and towards the way they consume the health care