EE441: Economics of Public Expenditure

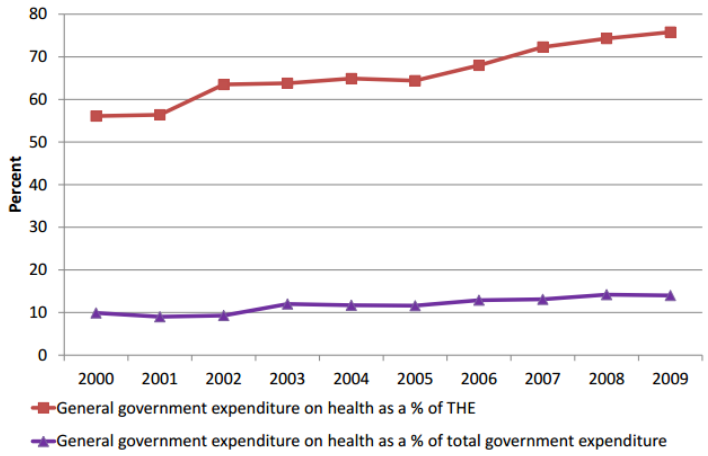
Health Care Market: an Overview*

*We thank Dr. Phatta Kirdruang for the useful study material.

Some Current Health Care Issues in Thailand

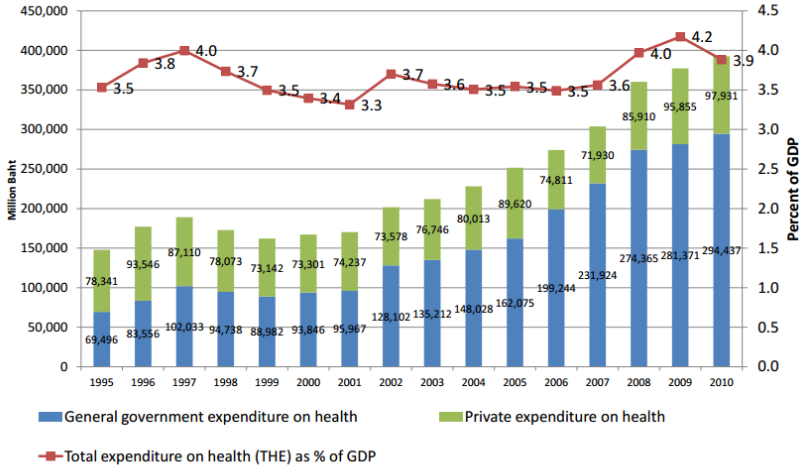
- Medical tourism hub
- How to pay doctors in public sector → P4P?
- Health coverage for migrant workers?
- Co-payment for medical costs the Universal Coverage (UC) scheme?
- Anything else?

Government Expenditure on Health



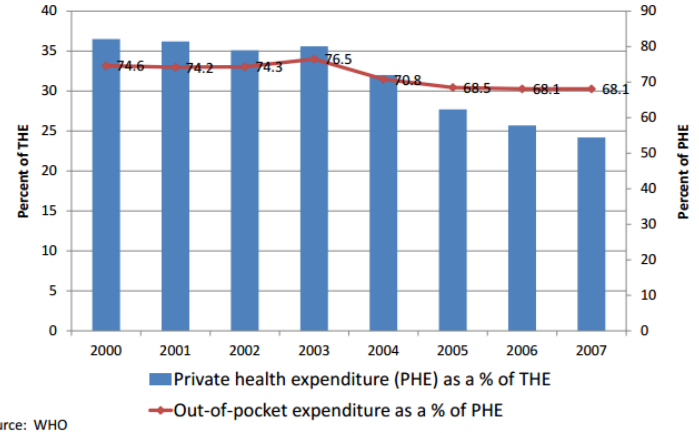
Source: WHO

Thailand's National Health Accounts



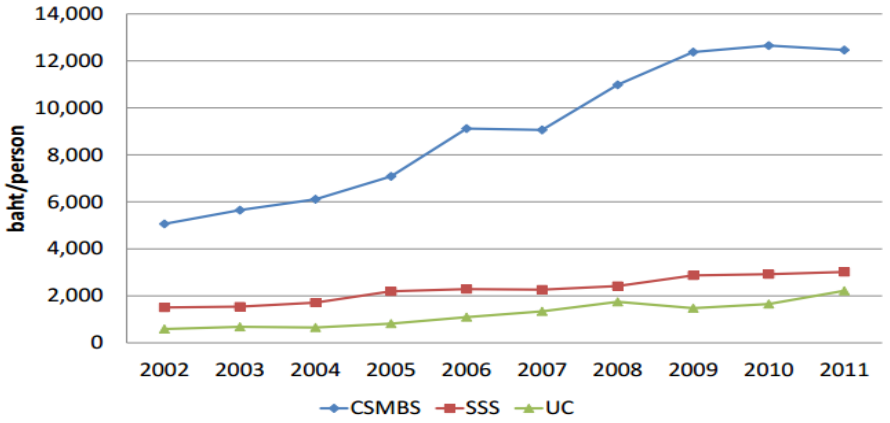
Source: WHO

Private Health Expenditures & Out-of-Pocket Expenditures

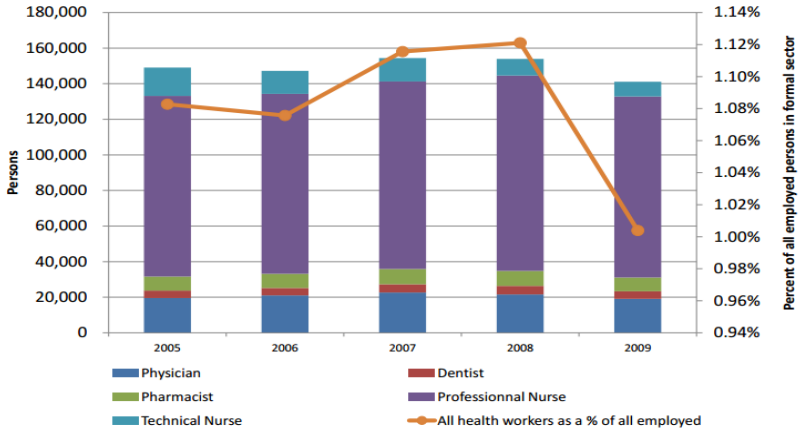


Source: WHO

Average Per Capita Health Expenditures under Public Health Schemes

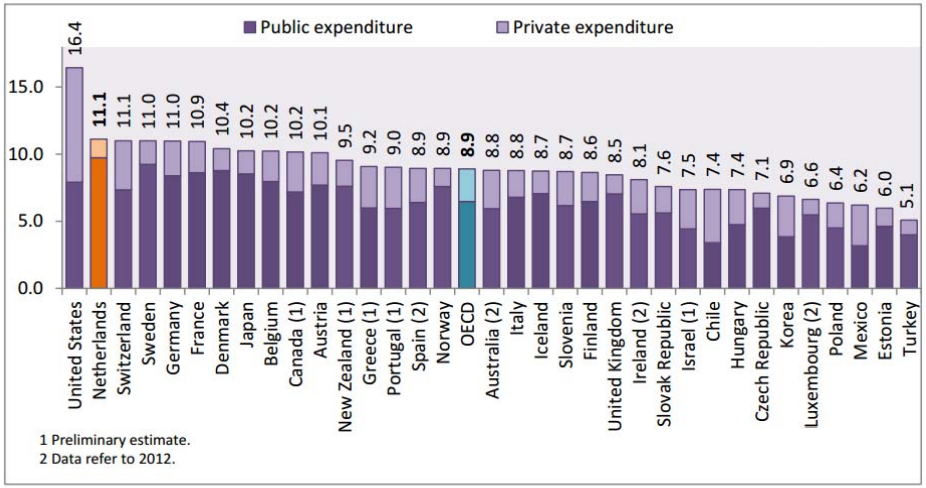


Health Care Workers



Sources: - Office of the Permanent Secretary for Public Health, Ministry of Public Health
- NESDB

Figure 2. Health spending* as a share of GDP, 2013



** Excluding capital expenditure.*
Source: OECD Health Statistics 2015

Health spending as a share of GDP in the United States remains an outlier among OECD countries

- Health spending in the United States (excluding investment expenditure in the health sector) was 16.4% of GDP in 2013, well above the OECD average of 8.9% and the next highest spenders - the Netherlands (11.1%), Switzerland (11.1%) and Sweden (11.0%).
- Compared with other OECD countries, private health insurance plays an important role in providing primary health care coverage in the United States – accounting for 35% of all health spending in 2013. The remainder is covered by households' out-of-pocket spending (12%)
- In per capita terms (adjusted for different price levels using economy-wide purchasing power parities), the United States spent USD 8713 per head in 2013. This compares with an OECD average of USD 3453

Health spending as a share of GDP in the Netherlands remains well above the OECD average

- Health spending in the Netherlands (excluding investment expenditure in the health sector) was 11.1% of GDP in 2013 (Figure 2), well above the OECD average of 8.9%. This has increased by 1.6 percentage points since 2005 and is the second highest share across OECD countries.
- In 2013, Dutch private households directly finance 5% of health spending, way below the OECD average (19.5%). The out-of-pocket share of health spending is the lowest among OECD countries, with only France (7%) recording a similarly low level in 2013.
- In per capita terms (adjusted for different price levels using economy-wide purchasing power parities), the Netherlands spent USD 5131 per head in 2013. This compares with an OECD average of USD 3453.

Health spending as a share of GDP in Sweden remains well above the OECD average

- Health spending in Sweden (excluding investment expenditure in the health sector) was 11.0% of GDP in 2013 (Figure 2), well above the OECD average of 8.9%. This has increased by 0.4 percentage point since 2011, because of the acceleration of health spending growth beyond economic growth in recent years
- Although out-of-pocket spending at 15% of health spending was below the OECD average of 19.5%, it has increased by almost a percentage point since 2011 as a result of the policy changes regarding the capping of out of-pocket payments for some services.
- In per capita terms (adjusted for different price levels using economy-wide purchasing power parities), Sweden spent USD 4904 per head in 2013. This compares with an OECD average of USD 3453.

HEALTH EXPENDITURE

Current expenditure on health, % of gross domestic product

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2013 (or nearest year)
Korea	4.5	4.3	4.7	4.7	5.0	5.4	5.6	5.8	6.3	6.5	6.5	6.7	6.9	7.1	6.9
Luxembourg	6.5	6.8	7.1	7.4	7.2	6.8	6.4	6.6	7.5	7.2	6.8	6.6 ..	..		6.6
Mexico	5.3	5.4	5.9	6.0	5.9	5.7	5.8	5.9	6.4	6.2	5.9	6.1	6.2 ..		6.2
Netherlands	7.4	8.0	8.5	8.6	9.5	9.4	9.4	9.6	10.3	10.4	10.5	11.0	11.1	11.1	11.1
New Zealand	7.6	7.9	7.7	7.9	8.2	8.6	8.4	9.2	9.7	9.7	9.7	9.8	9.5 ..		9.5
Norway	8.0	9.0	9.2	8.8	8.3	7.9	8.1	8.0	9.1	8.9	8.8	8.8	8.9	9.2	8.9
Poland	5.7	6.1	6.0	5.9	5.8	5.8	5.9	6.4	6.6	6.5	6.3	6.3	6.4 ..		6.4
Portugal	8.4	8.5	8.9	9.3	9.4	9.1	9.1	9.3	9.9	9.8	9.5	9.3	9.1	9.1	9.1
Slovak Republic	5.3	5.5	5.4	6.5	6.6	6.9	7.2	7.5	8.5	7.8	7.5	7.7	7.6 ..		7.6
Slovenia	8.4	8.0	8.1	7.9	8.0	7.8	7.5	7.8	8.6	8.6	8.5	8.7	8.7	8.6	8.7
Spain	6.8	6.8	7.5	7.6	7.7	7.8	7.8	8.3	9.0	9.0	9.1	9.0	8.8 ..		8.8
Sweden	8.0	8.4	8.5	8.3	8.3	8.2	8.1	8.3	8.9	8.5	10.6	10.8	11.0 ..		11.0
Switzerland	9.7	10.1	10.4	10.4	10.3	9.8	9.6	9.8	10.4	10.5	10.6	11.0	11.1	11.1	11.1
Turkey	5.0	5.2	5.2	5.1	5.1	5.4	5.5	5.5	5.8	5.3	5.0	5.0	5.1 ..		5.1
United Kingdom	6.6	6.9	7.1	7.3	7.4	7.6	7.6	7.9	8.8	8.6	8.5	8.5	8.5 ..		8.5
United States	13.2	14.0	14.5	14.6	14.6	14.7	14.9	15.3	16.4	16.4	16.4	16.4	16.4 ..		16.4
OECD AVERAGE															8.9

What is Health Economics?

"Health economics … studies the supply and demand of health care resources and the impact of the health care resources on a population."

The Mosby Medical Encyclopedia (1992, p.361)

The Relevance of Health Economics

- Size and contribution of the health sector in the overall economy
  - Large proportion of the GDP
  - Important employment sector
  - Importance in personal spending
- National policy concerns
  - Large share of total government expenditure
  - Number of sick people and economic costs and loss in the long run
- The economics sides to other health issues
  - Health care treatment choice
  - Individual health seeking behavior
  - Government's role
  - Etc.

Issues/Problems in Health Economics

- Examples:
  - What contributes to high infant mortality rates in some countries?
  - What are the impacts of private hospital mergers?
  - How does a certain national health policy affect the income distribution of the population?
  - How should we (individual/government) finance health care consumption?*
- *Main Goal*:
  - To better understand the economic aspects of health care problems in order to provide corrective health policies

Health Economics Studies

Microeconomics

- Study the behavior of agents in the health economy
  - Demand and supply of health and health care
  - Price determination of health service production factors and health care resources
  - Demand and supply of health insurance

Macroeconomics

- Look at the overall health economy
  - National Health Accounts
  - Health care system
  - Health care financing

4 Basic Questions

1. What combination of health care and other goods and services should be produced in the economy?
2. What specific health care goods and services should be produced in the health economy?

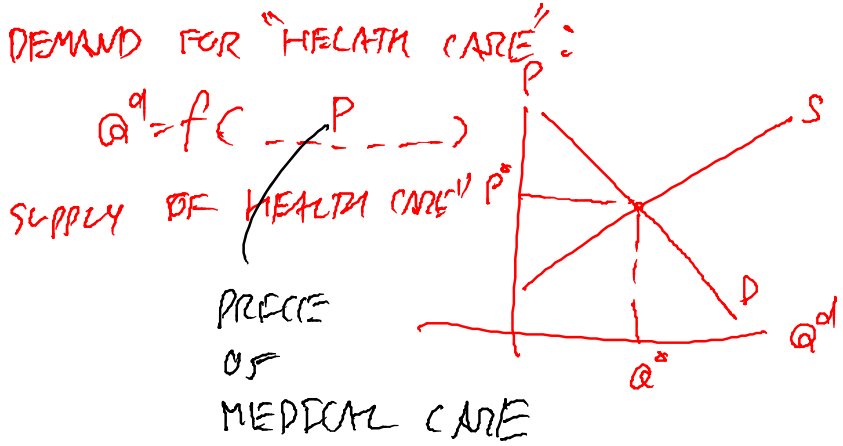
→ Allocative efficiency

3. What specific health care resources should we use to produce the chosen health care goods and services? → Production efficiency
4. Who should receive the health care goods and services that are produced? → Pareto efficiency

Efficiency

- Allocative efficiency
  - Producing a level of output where the cost of producing the last unit of output equals to its values (i.e. MC=MB).
- Production efficiency
  - Achieved when a level of output is being produced where the cost per output is the lowest.
- Pareto efficiency
  - A condition in which *no one can be made better off without making someone else worse off*.

Economic Analysis: Economic Models



Economic Analysis: Empirical Tests

- EMPIRICAL TESTING OF HEALTH ECONOMIC THEORIES
  - USE STATISTICAL TECHNIQUES TO VERIFY OR QUANTIFY THE MAGNITUDE OF THE RELATION AMONG ECONOMIC VARIABLES.

EX: $\ln Q^d_{\text{medical care}} = \beta_0 + \beta_1 \ln \text{PRICE} + \beta_2 \ln \text{INCOME} + \ldots$

2 Types of Analysis

- **Positive Analysis**
- What is? What was? What happened?
- Examples:
- How much would a 10% co-payment affect the medical care consumed under the UC scheme?
- Does the universal health coverage policy reduce the income inequality in Thailand?
- **Normative Analysis**
- What should be? What ought to be? Which is better?
- Examples:
- Should public hospitals charge a co-payment from UC beneficiaries?
- Should Cambodia adopt a national health insurance program?

How economists view health and health care

- How do we measure health?
- Is health care different from other good and services?

Health & Health Care

- Health

"Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity."

Source: https://apps.who.int/aboutwho/en/definition.html)

- Health care service

"Health service is any service (i.e. not limited to medical or clinical services) aimed at contributing to improved health or to the diagnosis, treatment and rehabilitation of sick people"

Source: http://www.euro.who.int/__data/assets/pdf_file/0014/102173/E69927.pdf

How Do We Measure Health?

- Is health a stock or flow variable?

- Commonly used health outcomes (of population):
  - Life expectancy
  - Mortality rates
  - Morbidity
  - Pattern of diseases
  - Health-related quality of life:
    - Quality-adjusted Life Year (QALY)
    - Disability-adjusted Life Year (DALY)

Is Health Care Different?

- Unusual economic features in health care markets:
  - Dominance of uncertainty at all levels of health care
  - Problems of information: Asymmetric information
  - Presence of externalities
  - Large extent of government involvement
  - Roles of equity and need

Uncertainty

- Arrow (1963): Uncertainty is prevalent in health care markets , both on the demand side and on the supply side.
- Demand side:

  Consumers are uncertain of the health status and need for health care
- Supply side:

  Providers are uncertain whether a treatment will work. If cured, uncertain whether it is the result of the treatment or something else.

Uncertainty

- At macro level, there is uncertainty about who will become ill, and who will not.
- The existence of uncertainty and risk implies a role of health insurance.
- Use of expected utility (EU) model in analyzing economic behavior

$$EU = p * U_{ill} + (1 - p) * U_{healthy}$$

where p= probability of being ill

- If markets for insurance fail, the government may need to intervene (Arrow, 1963).

PISCRUE

B/C ASYMMETRIC INFORMATION PROBLEM

Asymmetric Information

ADVERSE SELECTION

MORAL HAZARD

Asymmetric information between physicians and patients (P-A PROBLEM)

- Patients rely on doctors' skills and knowledge in providing diagnosis and treatment.
  - Same as the 'Lemons problem'
  - Doctors need to be qualified → Licensure
  - Need ethical codes
- Principal-Agent problem:
  - Patients are principal, and doctors are agents.
  - "Physician-induced demand" (or supply-induced demand) hypothesis

Asymmetric Information

- Asymmetric information in health insurance industry

  Moral hazard
  - Insured persons use excessive health care services because of lower costs.

  Adverse selection
  - Sick persons hide the information about their actual health status from insurance companies.
  - Insurance companies sell insurance only to healthy persons.

  → "Cherry picking"

- Both moral hazard and adverse selection problems lead to welfare loss to the society.

Externalities

- Externalities occur when : ① PRODUCERS DO NOT INCUR ALL THE COSTS OF THE PRODUCTION
  ② CONSUMERS DO NOT RECEIVE ALL THE BENEFITS OF THE CONSUMPTION.

GIVES A JUSTIFICATION FOR GOVT. INTERVENTION.

Externalities

	Positive Externality	Negative Externality
Consumption	IMMUNIZATION VACCINATION	ALCOHOL CONSUMPTION
Production	R&D INNOVATION	HOSPITAL DUMPS WASTE INTO THE RIVER

Positive Externality: Immunization

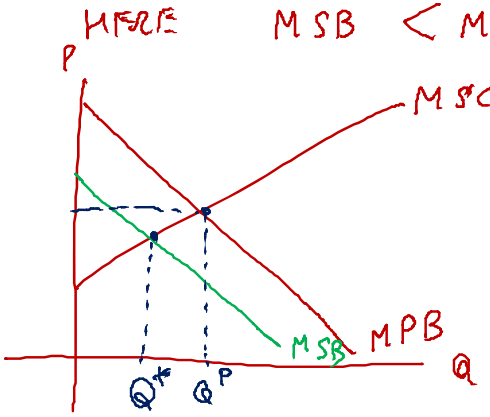
- Immunization not only benefits the person who is immunized, but also benefits other people in the society. MSB > MSC

- GOVT SHOULD INTERVENE BY ↓ PRICE AND ↑ QUANTITY
  - SUBSIDIZE IMMUNIZATION

Positive Externality: Immunization

- The externality in immunizations suggests that too little of immunization, as determined by the market , is being produced.

Negative Externality: Alcohol Consumption



DUE TO THE FACT THAT THIS ACTIVITY GENERATES NEGATIVE CONSUMPTION BENEFITS TO OTHERS

Government Involvement

- Problems of asymmetric information and externalities provide justification for government intervention.

- Asymmetric information
  - FOOD AND DRUG CONTROL
  - LICENSE FOR DOCTORS
- Externalities
  - SUBSIDIES TO PROMOTE HEALTH
  - TAXES TO CONTROL "BADS"

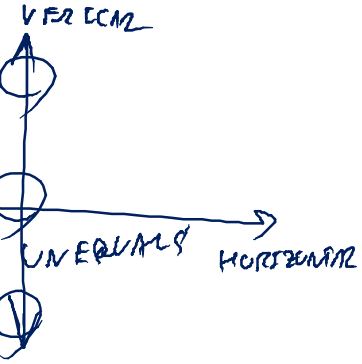
STN TAXES

Government Involvement

- In Thailand, the government plays a crucial role in the health care sector.
  - Government (through Ministry of Public Health) is the main health care provider.
  - The majority of hospitals in Thailand are public hospitals.
  - Government pays for almost 70% of total health expenditure.
  - Government subsidizes education of health personnel.

Equity & Need

- VERTICAL EQUITY: PEOPLE W/ DIFFERENT ATTRIBUTES CONCERNING THEIR WEALTH SHOULD BE TREATED UNEQUALLY
- HORIZONTAL EQUITY: PEOPLE W/ THE SAME ATTRIBUTES SHOULD BE TREATED EQUALLY



Equity & Need