Externalities and Policies

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An Understanding of Externalities

- Externality: When the actions of one economic agent affects another economic agent's welfare outside the market mechanism
  - Violation of the assumption of the first welfare theorem
  - Inefficiency results
  - Policy interventions are required to internalize the externality

- In an externality, cost is transferred from the polluter to the victim
- The polluter also secures an implicit subsidy by having caused the externality (Templet and Farber, 1994)
  - Implicit subsidy = "retained dollars which would have been spent on pollution control"

  = increased profit from polluting
- Polluter's profits increases, societal and health costs increase
- From a Cost-Benefit Analysis perspective, this can lead to a lower cost of externality

The Cost of Externalities on QOL

- More circuitous pathways than unidirectionally from polluter to victim
  - Pollution inequality
  - Further linkages and feedback cycle
  - The effects on Quality of Life (QOL) is amplified

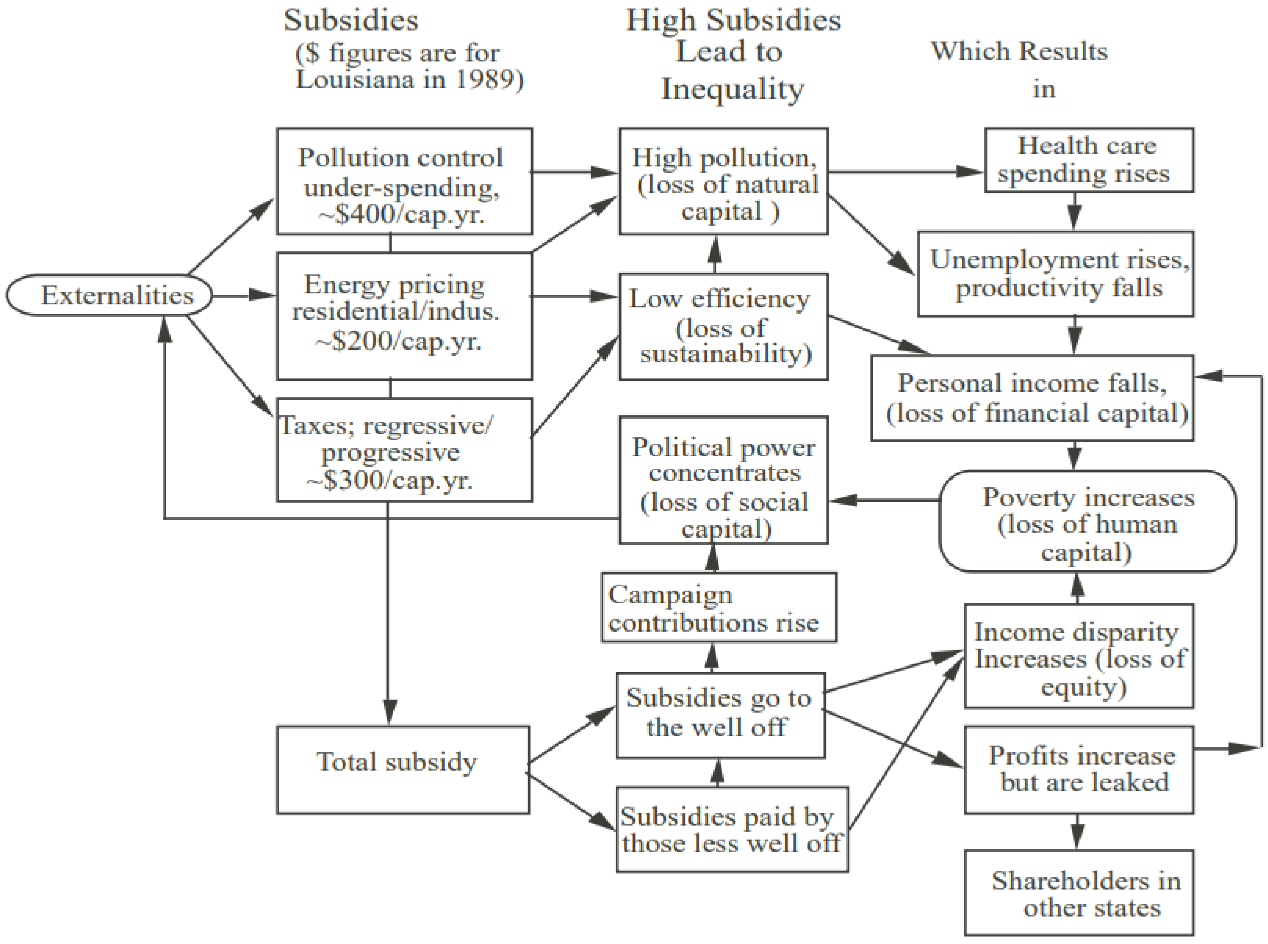

Fig. 4. The relationship among externalities, natural capital, and Quality of Life.

Source: Costanza et al., (2002)

Consumption Externalities

- I.e., Me consuming a good makes you better/worse off, but not through the price mechanism

- Examples
  - Education
  - Green preferences
  - Second-hand smoke
  - Reckless driving

- With increased urbanization, higher density of infrastructures and people = expectedly more concern on and conflicts resulting from externalities

Parliament: Ban smoking near windows and on balconies in homes, says Louis Ng

Mr Louis Ng noted that 383 people in Singapore died due to secondhand smoke in 2016. PHOTO: HDB

Goh Yan Han
Political Correspondent

PUBLISHED OCT 5, 2020, 9:21 PM SGT

SINGAPORE - A Government Parliamentary Committee (GPC) has called for a ban on residents smoking near windows or on the balconies of their homes, to minimise the effects of second-hand smoke on neighbours.

Mr Louis Ng, who chairs the GPC for Sustainability and the Environment, noted that 383 people in Singapore died due to second-hand smoke in 2016.

The Mainichi
Japan's National Daily Since 1922

Passive smoking on apartment balconies in Japan causing a stink

June 19, 2023 (Mainichi Japan)

(Mainichi)

TOKYO -- It was in July 2021 that a woman in Hyogo Prefecture suddenly noticed the smell of cigarette smoke wafting into her living room. A smoker had just moved into the apartment next to her. Worried, the woman shared her story, and based on this, the Mainichi Shimbun began to investigate the smoldering issue of passive smoking on apartment balconies.

Timeline
0

Unhappiness over Sengkang temple with columbarium: 6 other cases of residents opposing developments near their homes

Artist's impression of the planned Chinese temple with columbarium next to BTO project Fernvale Lea. -- PHOTO: LIFE CORPORATION LIMITED

Jalelah Abu Baker

PUBLISHED JAN 5, 2015, 8:06 PM SGT

SINGAPORE - Future residents of Build-To-Order (BTO) project Fernvale Lea are up in arms over a planned Chinese temple with columbarium next to their flats. The columbarium, where funeral urns will be stored, will take up 15 per cent of the temple it will be housed at.

Commentary

Commentary: Should commuters be banned from watching loud videos on their phones while on public transport?

Loud videos or music from handphones on public transport may not just be annoying, but hazardous to your health, says the Singapore Kindness Movement's Dr William Wan.

File photo of commuters using their phones on a train. (Photo: iStock/justhavealook)

William Wan

29 Oct 2023 06:00AM

THE BROAD VIEW · SUBSCRIBERS

Prioritising social grace in Singapore

Euston Quah and Tan Jun Rui
Published Sat, Aug 05, 2023 · 5:00 am

Singa the Lion at a vehicle holding area near the F1 Pit Building
Kindness Movement will appear in the Total Defence Parade s

Social Grace +

AS SINGAPORE celebrates its 58th National Day, it
the uniquely constrained city-state has achieved th
significant economic development and growth. Its a
have surpassed most nations beyond expectations.
remained challenging to overcome, and that is the p
Singapore, relative to countries such as Japan, Cana

US YouTuber visiting Singapore for first time shocked by people picking their noses in public

Returning home to gre
terraces and rain gard

From Around The W

Ad
7 Things to Consider Befor
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Stomp Singapore
@stompsingapore

Stomper B said a group of four diners did not clear their table at Boon Lay 221 Foodhouse. He asked: "Where is NEA?"

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11:24 AM · Oct 19, 2023 · **444** Views

They will grow back again: Jurong resident who had plants cut down by town council

Mr Kang Poh Kim said he had been growing the plants since he moved into the flat nearly 40 years ago. PHOTOS: SHIN MIN DAILY NEWS

Policy Instruments

- Economic instruments (incentives based)
  - Private sector solution: Coase Theorem
    - Private negotiations can lead to price corrections to reflect the external costs and benefits
    - Certain conditions have to be met

(On smoking near windows and balconies in homes)

"DIRECT, FRIENDLY DISCUSSIONS" SHOULD BE FIRST ATTEMPT

Mr Tong noted that filing a claim under the CDRT should be the "last resort".

Instead, the approach of the Community Dispute Management Framework (CDMF) should always be the "first attempt". This encourages neighbours to engage in "directly, friendly discussions" or mediation.

Smoker sues upstairs neighbour for S$60,000 for throwing items on air-con ledge, hanging laundry in two-way dispute

The dispute started over the woman's smoking in her flat, which led to her upstairs neighbours throwing objects and liquids into the smoker's flat and making loud noises.

Lydia Lam
@LydiaLamCNA

03 Aug 2023 11:50AM
(Updated: 03 Aug 2023 04:11PM)

Policy Instruments

- Economic instruments (incentives based)
  - Public sector solution: Price and/or Quantity controls
  - Lack of information can lead to regulatory failures and yield inefficient outcomes
    - "Estimates of the optimal (carbon) tax rate… is difficult, perhaps even heroic" (Weisbach and Metcalf, 2009)

- Non-economic instruments
  - Advisory and moral suasion
  - Nudging and choice architecture
  - Regulatory and legal measures (command and control)
  - Provision of information and education

- No clear-cut economic framework for instrument choice
- Mix and differentiated levels of instruments

Externalities with Internalities

- Earlier example: Polluter, by causing more pollution, increases profit

- Another scenario: Polluter, by causing more pollution, decreases profit
    - Standard economic theory predicts no resulting externality
    - Empirically observed

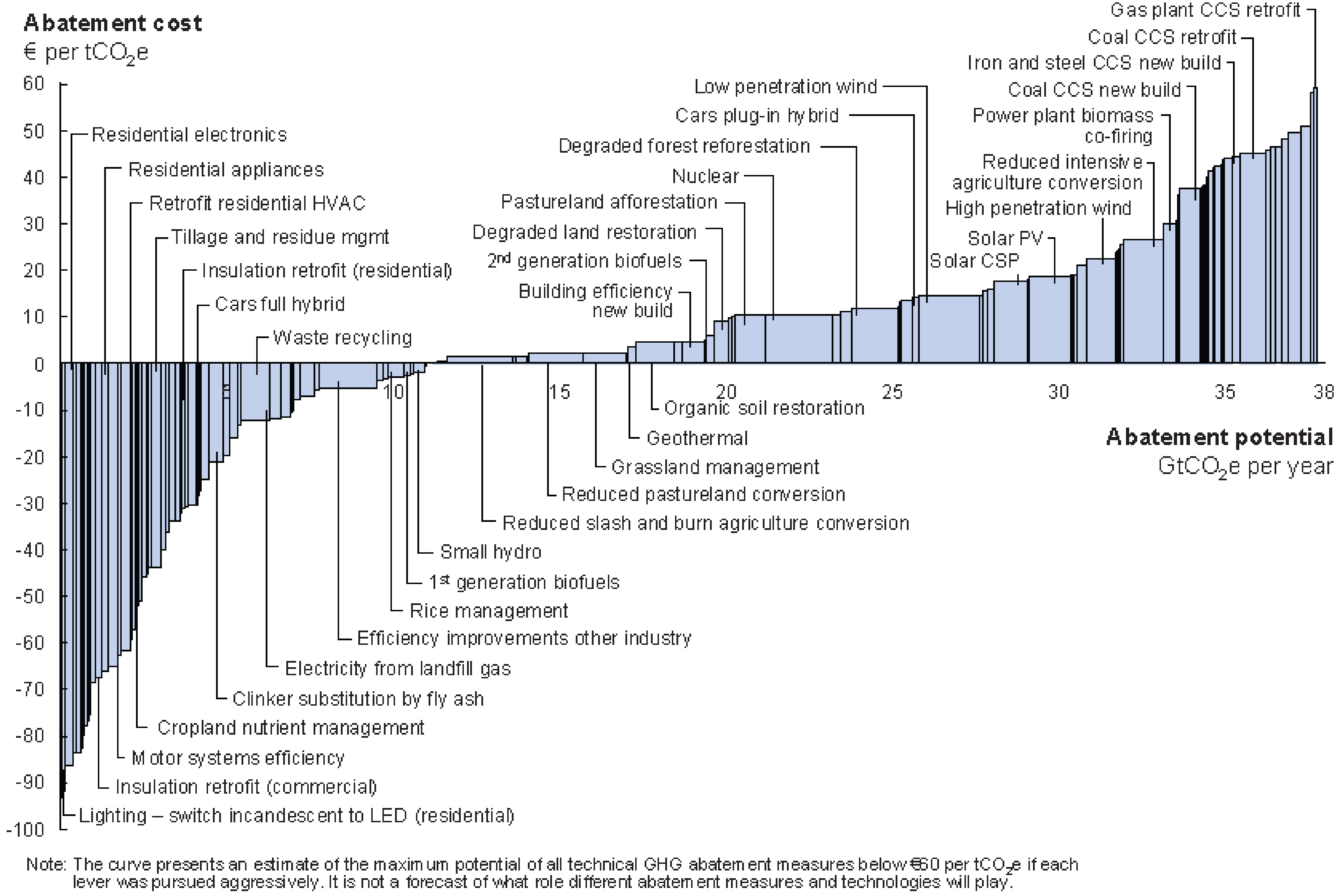
- "Externalities with Internalities" (Allcott et., 2012)
    - Internality: "Costs we impose on ourselves by taking actions that are not in our own best interest"
        - "externalities that individuals impose on themselves."
    - Correcting the externality, e.g., using tax or provision of information, can yield an Internality Dividend

Externalities with Internalities: The Energy Paradox

- Energy Paradox/Energy Efficiency Gap (Jaffe and Stavins, 1994)
  - Under-investments in energy-efficiency for durables
    - Externality cost on the environment
    - Internality cost on oneself, due to higher lifetime monetary costs (purchase + operation of the durable)

- By investing in energy-efficiency
  - Externality costs decreases + internality decreases
  - Causing less pollution results in less costs

- 2 main explanations:
  - Cognitive constraints; myopia, saliency, self-control/impulsivity, innumeracy…
  - Information asymmetry: lack of information on the lifecycle cost



McKinsey‘s global cost curve (2007)

Externalities with Internalities: The Energy Paradox

- Internality itself is not a problem for the market, but correcting internalities will increase individual welfare

- Externalities with internalities provides a strong case for intervention

- Policy options:
  - Banning or taxing energy-inefficient durables (“paternalistic” regulation)
  - Bridging the information asymmetry and using nudges preserves and enhance individual choices
    - Increase saliency of internality
    - The motivation for regulating externalities is self-guided

Externalities with Internalities: Beyond Energy Policy

- Energy efficiency policies such as energy standards and information provision are important because there are substantial net benefits from externality and internality reduction

- Another example: Sugar-sweetened beverages (Allcott, Lockwood, and Taubinsky, 2019)
  - Optimal tax depends on
    - (1) externalities, or uninternalized health system costs from diseases caused by sugary drink consumption;
    - (2) internalities, or costs consumers impose on themselves by consuming too many sugary drinks due to poor nutrition knowledge and/or lack of self-control; and
    - (3) regressivity, or how much the financial burden and the internality benefits from the tax fall on the poor.
  - Sugar-sweetened beverage taxes are welfare enhancing

Externalities with Internalities: Beyond Energy Policy

- Externalities often involve internalities
  - Preserving the environment
    - Green vs brown firms
  - Drunk driving
  - Smoking: Smoking paradox
    - Internality: “80% of smokers want to quit, and 54% of people who are serious about quitting fail in a week or less” (Gruber, 2016)
    - Due to self-control problem, myopia, imperfect information

Policy Implications?

- Optimal policy to consider the presence of internalities (in addition to externalities) and regressivity
- Internality Targeting Principle: Optimal combination of multiple instruments that is dependent on the average internality of the consumers marginal to each instrument (Allcott, Mullainathan, and Taubinsky, 2012) to address the energy paradox.
  - Consumers who undervalue energy costs (larger internality) are less responsive to energy taxes
  - Tax below marginal damages, increase subsidy for energy efficient products

$$\Delta W \geq \approx \left[(|Q_{\tau_E}| - D_{\tau_g}) p_E + Q_{\tau_E}(\tau_g - \phi) - \left(\tau_E + \frac{1}{2}\Delta_{\tau_E} \right) D_{\tau_E} \right] \Delta_{\tau_E}$$

- Identification and valuation of the internality, not only externality. E.g. How can we discourage smoking?
  - Smoking affects your neighbor
  - Smoking shortens your lifespan by 7 years
  - Smoking will cost you $200,000 -> increasing the saliency of the Internality Dividend

Parting Thoughts

- Addressing externalities is becoming more important with increasing urban density
- Addressing externalities with internalities is also being more important, and can bring about increase in welfare
  - Policies optimization must consider internalities
- Other confounding issues

'If you can't smoke here nor there, then what?': Smoker & non-smoker S'poreans on smoking in HDB flats

Soft truths to keep Singapore from stalling.

Tanya Ong | Jason Fan | October 10, 2020, 03:21 PM