

Private, Social and Self Insurance for Long term Care A Political Economy Analysis

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Introduction

Dependency: inability to perform some activities of daily life (eating, dressing, etc.).

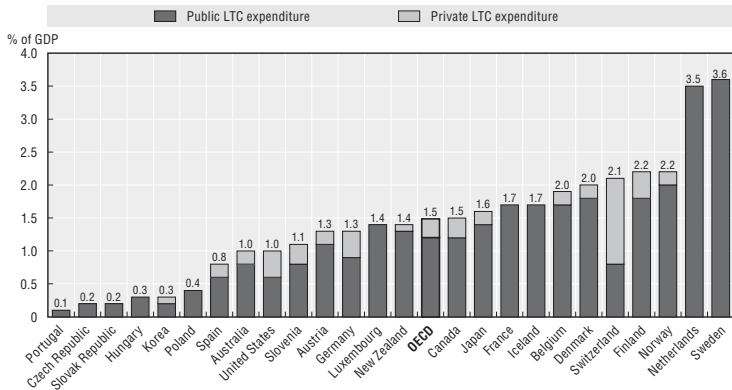
Several differences between health and long-term care (LTC) expenditures:

- Health care services aim at restoring health, while LTC aims at making the condition more bearable;
- Dependency concentrated mainly among very old people (80+), and risk patterns differ: for instance, richer people live longer and have a higher chance of needing LTC.

Three main actors: State, family and private sector:

- Family (informal help) is by far biggest provider. For instance, 80% of elderly dependent live at home.
- Public and private insurance: see OECD (2011) graph:
 - Very little private insurance.
 - No obvious correlation between amounts of public and private insurance. Does this mean there is no crowding out between the two?

Public and Total Spending on LTC



OECD, Help Wanted? Providing and Paying for Long-Term Care, 2011

- Many changes in perspective:
 - increase in prevalence as people live longer;
 - less family help;
- Not much literature on LTC, and mostly focuses on normative issues (such as: is there a role for social LTC insurance? how should reimbursements be made (cost plus, lump sum)?)
- Main questions here:
 - Why so little private insurance? Crowding out between public and private?
 - How will demographic changes affect the political support for social LTC insurance, and the demand for private insurance as well?

- Need to build political economy model, where people differ in risk, income and family help.

The model without private insurance

- Individuals live two periods.
- When young, they earn a wage, pay income taxes, save and make a transfer to their parents conditional on the parents needing LTC.
- When old, they live out of their saving, plus the social transfer if they need LTC, plus a transfer from the family if they have children and they need LTC.
- Three sources of heterogeneity among individuals i :
 - exogenous income, w_i ;
 - probability of needing LTC, Π_i ;
 - probability of having (caring and close) children when needing LTC, p_i .

- Individuals choose privately how much to save and decide by majority voting the size of the public program.
- A social norm defines the level d of transfer to needy parents. No explicit altruism.
- Timing: people vote first over social LTC insurance, observe the result of the vote, and then decide on their private saving.
- Only young people vote, once and for all.

Young individual i 's lifetime utility function is

$$U_i = w_i(1 - \tau) - s_i - l_i d \\ + (1 - \Pi_i)u(s_i) + \Pi_i [p_i H(c_c) + (1 - p_i)H(c_n)],$$

- s_i is saving,
- the utility function is $u(\cdot)$ when in good health and $H(\cdot)$ when needing LTC. We assume that $u(c) > H(c)$ but that $u'(c) < H'(c)$ for all c . For instance, $H(c) = u(c - L)$.
- $c_c = s_i + b + d$ is the consumption level of parents in LTC who have children; $c_n = s_i + b$ otherwise;

- b is the lump sum public transfer paid to all people in LTC. It is financed by a linear tax on young people's income at a rate τ ;
- The government's budget constraint is given by

$$\tau\bar{w} = b\bar{\Pi}, \quad (1)$$

where \bar{w} is the average income, $\bar{\Pi}$ is the average probability of needing LTC.

Individually optimal saving and social insurance contribution rate

Result 1 *Savings (Self-Insurance) Decision* s_i^* given by

$$(1 - \Pi_i)u'(s_i^*) + \Pi_i [p_i H'(s_i^* + b + d) + (1 - p_i)H'(s_i^* + b)] = 1.$$

- Optimal saving independent of income (thanks to quasi-linearity in first period) but depends on risk & family help.
- Both social insurance and family care crowd out self-insurance.

Result 2 *Social Insurance* τ_i^* given by

$$\Pi_i [p_i H'(s_i^* + b + d) + (1 - p_i) H'(s_i^* + b)] \left(\frac{\bar{w}}{\bar{\Pi}} \right) = (<) w_i.$$

Comparative statics of the most-preferred (interior) bundle
 (s_i^*, τ_i^*) :

- Public provision redistributes
 - from rich to poor: richer agents substitute self-insurance (larger s_i^*) to social insurance (lower τ_i^*).
 - from low-risk to high-risk: riskier agents prefer more social insurance (larger τ_i^*) but not always less self-insurance.
- Informal care crowds out social insurance.

Correlations

Result 3 (i) *Positive correlation between income and risk: both have opposite effects on τ^* !*

(ii) *Correlation between income and family help. Reinforcing impacts on τ^* if positive correlation (micro data), opposite if negative correlation (macro data - “South-North gradient”).*

Corner solutions for τ

Result 4 (i) *Richer people want no social insurance: there exists a threshold value of w above which individuals prefer $\tau = 0$.*

(ii) *Non risky people want no social insurance: there exists a threshold Π_i below which $\tau_i^* = 0$.*

(iii) *No such thresholds for family help (p_i, d) .*

- If people are rich enough, they will finance their LTC needs with their own private savings, even if this results in oversaving when they do not need LTC.
- If no risk, no need for LTC insurance!

Introducing private insurance

- We now introduce a private insurance scheme which is actuarially fair: the premium does not depend on income but is based on the individual risk Π_i (which is assumed to be observable by the insurer).
- We assume that insurers do not condition the payment on the transfer made by children (for instance because they cannot observe it).
- Individuals can choose the quantity of private insurance that they buy, as measured by the insurance premium a_i paid in the first period of life. In case they need LTC, they then receive an actuarially fair amount

$$x_i(a_i) = \frac{a_i}{\Pi_i}.$$

The utility of individual i is then given by

$$\begin{aligned} U_i &= w_i(1 - \tau) - s_i - l_i d - a_i \\ &+ (1 - \Pi_i)u(s_i) \\ &+ \Pi_i [p_i H(c_c) + (1 - p_i)H(c_n)], \end{aligned}$$

with

$$\begin{aligned} c_c &= s_i + b + d + x_i, \\ c_n &= s_i + b + x_i, \\ b &= \tau \frac{\bar{w}}{\bar{\Pi}}, \\ x_i &= \frac{a_i}{\Pi_i}. \end{aligned}$$

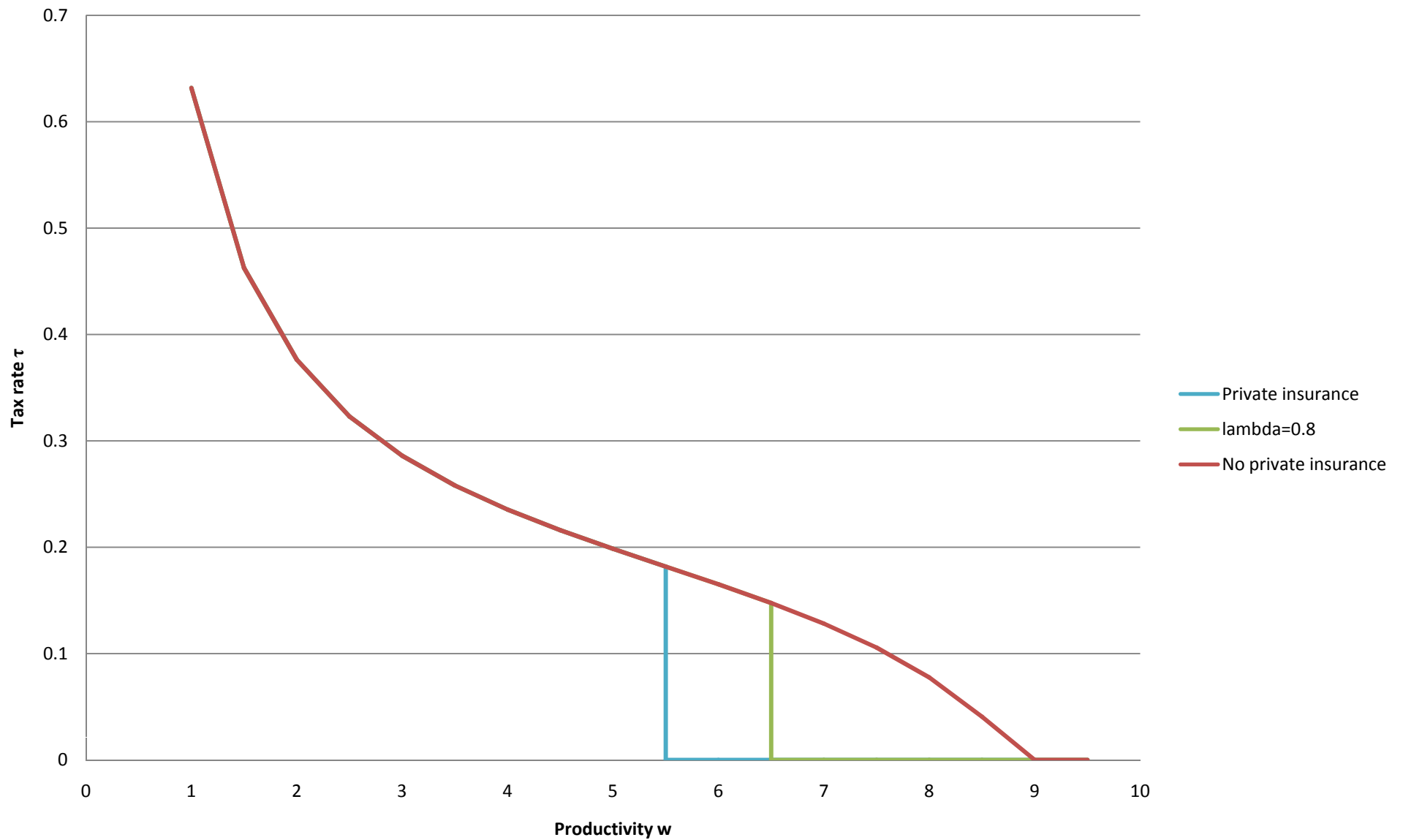
Heterogeneity in productivity alone

- We assume that $\Pi_i = \Pi$, $d = 0$.
- If no private insurance ($a_i = 0$): τ_i^* decreases with w_i , and is zero for $w > \tilde{w}$ with $\tilde{w} > \bar{w}$ (Intuition: social insurance as the only targeted way to transfer consumption towards bad state of world). Majority chosen $\tau^V = \tau^*(w_{med})$.

Result 5 *Allow for private insurance. At most-preferred allocation, we have that $(\tau_i^* > 0, a_i^* = 0, s_i^* > 0)$ if $w < \bar{w}$ and $(\tau_i^* = 0, a_i^* > 0, s_i^* > 0)$ if $w > \bar{w}$.*

- Same τ_i^* if $w < \bar{w}$, then drops to zero for $w > \bar{w}$.
- Graph of τ_i^* as a function of w_i^* , with and without private insurance.
- Interestingly, no change in τ^V provided that $w_{med} < \bar{w}$!

Figure 4: τ^* as a function of w



If loading factor on private insurance, so that $x_i(a_i) = \lambda a_i / \Pi_i$ with $\lambda < 1$, then :

- threshold above which τ_i^* is zero is \bar{w} / λ ,
- as λ decreases, demand for private insurance decreases both at the extensive and intensive margins,
- if λ low enough, demand for private insurance is nil.
- Empirically confirmed: Finkelstein and Brown (2011).

Heterogeneity in (w_i, Π_i)

Result 6 *Assume that $d = 0$. We obtain:*

$$(i) \text{ if } \frac{w_i}{\Pi_i} < \frac{\bar{w}}{\bar{\Pi}} \text{ then } \tau_i^* > 0 \text{ and } a_i^* = 0,$$
$$(ii) \text{ if } \frac{w_i}{\Pi_i} > \frac{\bar{w}}{\bar{\Pi}} \text{ then } \tau_i^* = 0 \text{ and } a_i^* > 0,$$

- Does NOT mean that w_i/Π_i determines τ_i^* when $a_i^* = 0$. We show that if $\frac{w_i}{\Pi_i} = \frac{w_j}{\Pi_j}$ with $i \neq j$, $w_i < w_j$, then $s_i^* > s_j^*$ and $\tau_i^* < \tau_j^*$.
- Those with $\frac{w_i}{\Pi_i} > \frac{\bar{w}}{\bar{\Pi}}$ all have the same s^* (so that $u'(s^*) = 1$) but buy less private insurance as their risk Π_i increases (because of a lower return).
- As for private insurance loading factor, same conclusions as above, substituting w/Π to w .

Reintroducing family help

Assume that $d > 0$ with same p for all

Result 7 *If d and p are low enough:*

- (i) the threshold $\bar{w}/\bar{\Pi}$ that separates those preferring private or social insurance is not affected.*
- (ii) saving is not affected by p or d .*
- (iii) both τ^* and a^* decrease with p and d .*

There are only intensive margin impacts on (social and private insurance), up to the point where $\tau^* = a^* = 0$ for $\bar{w}/\bar{\Pi}$.

Result 8 *If d and p are large enough:*

(i) the threshold that separates those preferring private or social insurance decreases with p and d .

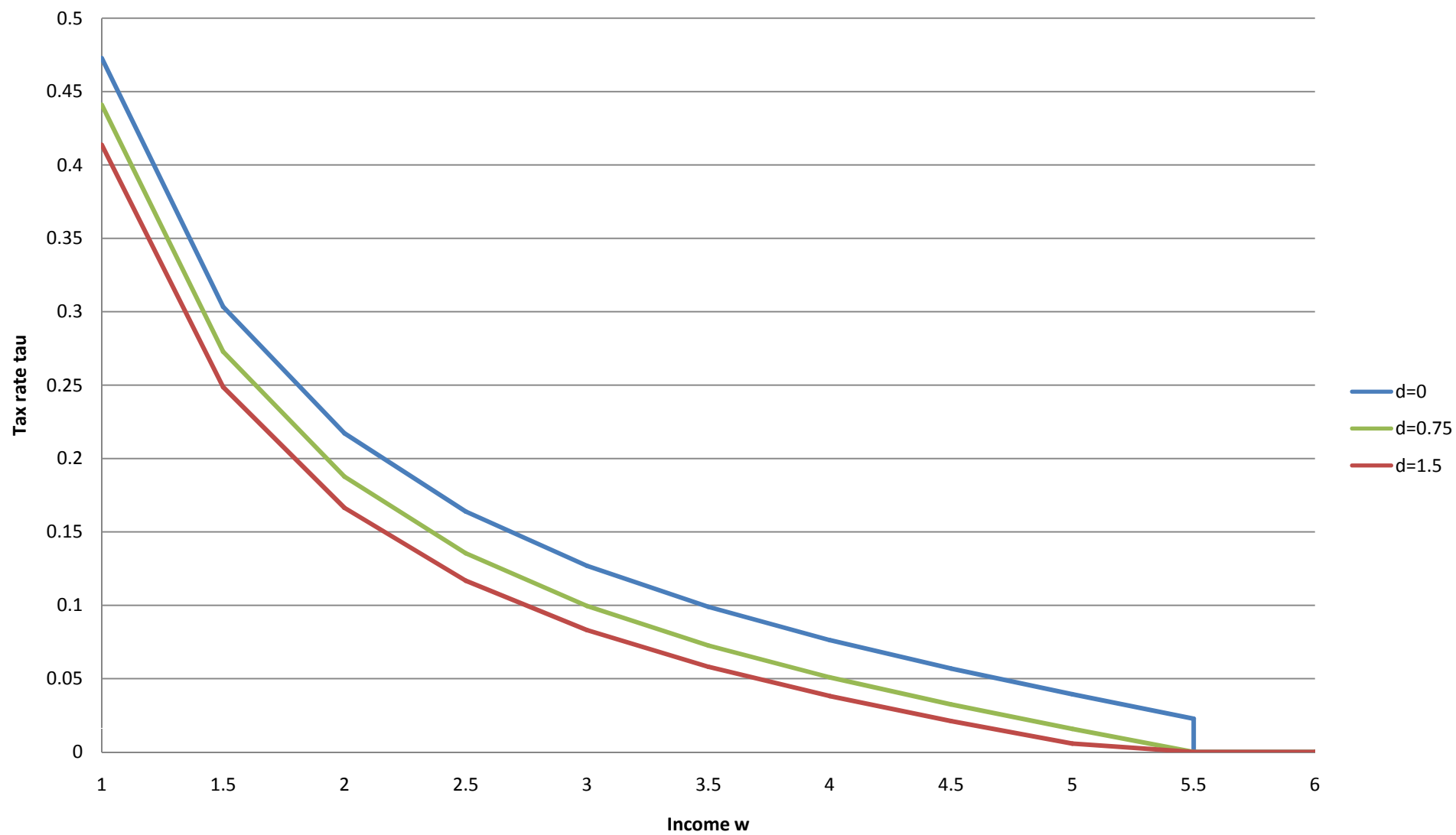
(ii) no one buys private insurance

(iii) τ^ decreases with p and d .*

(iv) saving is not affected by p or d below the threshold, but decreases with p and d above.

- There are both extensive and intensive margin effects of family help on social insurance.
- Social insurance fares better than private insurance thanks to income redistribution.

Figure 5: τ^* as a function of income and of family help



Conclusions

- Model well behaved, with intuitive comparative statics results.
- Why is there so little private insurance, while there is sizeable social insurance in some OECD countries?
 - Loading factor on private insurance decreases demand both at intensive and extensive margins;
 - Family help decreases demand for both social and private insurance, but especially the latter (because support for social insurance in part due to redistribution);

- Why is there no clear correlation between amounts of social and private insurance in OECD countries?
 - Although there is crowding out of social by private, in our model offering private insurance does not decrease majority-chosen level of social insurance because the crowding out is concentrated on agents who already wanted less social insurance than the majority-chosen level!
- All three dimensions (distributions of income, risk and family help) may explain heterogeneity among OECD countries.

- As for predictions, lower family help should benefit both social and private insurance.
- Impact of general increase in Π (thanks to increased longevity) more difficult to ascertain (more needs, but lower insurance return). Importance of correlations.
- Next step: behavioral political economy.