Efficient Regulatory Mandates*

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We focus on policies that mandate firms to bundle their product with goods and services that benefits a subset of customers or employees.

Examples:

1. American with Disabilities Act

2. Drinking Water Standards

3. Minimum Wage Legislation

Such policies:

- Benefit a subset of the population (the "special interest")
- Distort market prices (firms cannot price discriminate customers depending on whether or not they belong to the special interest)

Standard Economic Theory: redistributive policies are efficiently performed using cash transfers.

“Chicago” view: politicians that use inefficient transfers cannot persistently fool voters and will eventually be kicked out of office. If seemingly inefficient instruments are observed, something must be missing in the analysis.

Explanations

- paternalism

- it's easier to control quantities than charge taxes (Glaeser and Schleifer AEAPP 2001)

- disguised transfer mechanisms (Coate and Morris JPE 95): con- side transfers may be efficient in some states of the world

- Weitzman (REStud 1974) seminal paper on price vs. quantity controls.

- Our paper: transfer mechanisms with "concealed costs" that are never efficient under complete information

The Basic Model

- cost of project $a \sim F(a)$, $a \in A \subset [a_l, a_h]$

- linear technology

$$c = f(h) = h$$

- the representative citizen desires the project

$$\begin{array}{ll} U(c,l) & \text{if project is not funded} \\ U(c,l) + b & \text{if project is funded} \end{array}$$

- if enough cash is available, the special interest buys the project

$$v(c, \text{no project}) \leq v(c - a, \text{project}) \quad \forall a \in A, c \geq a$$

Policies (price of consumption good p)

- cash transfer t ($\Rightarrow$ budget constraint $pc = 1 - l - t$)

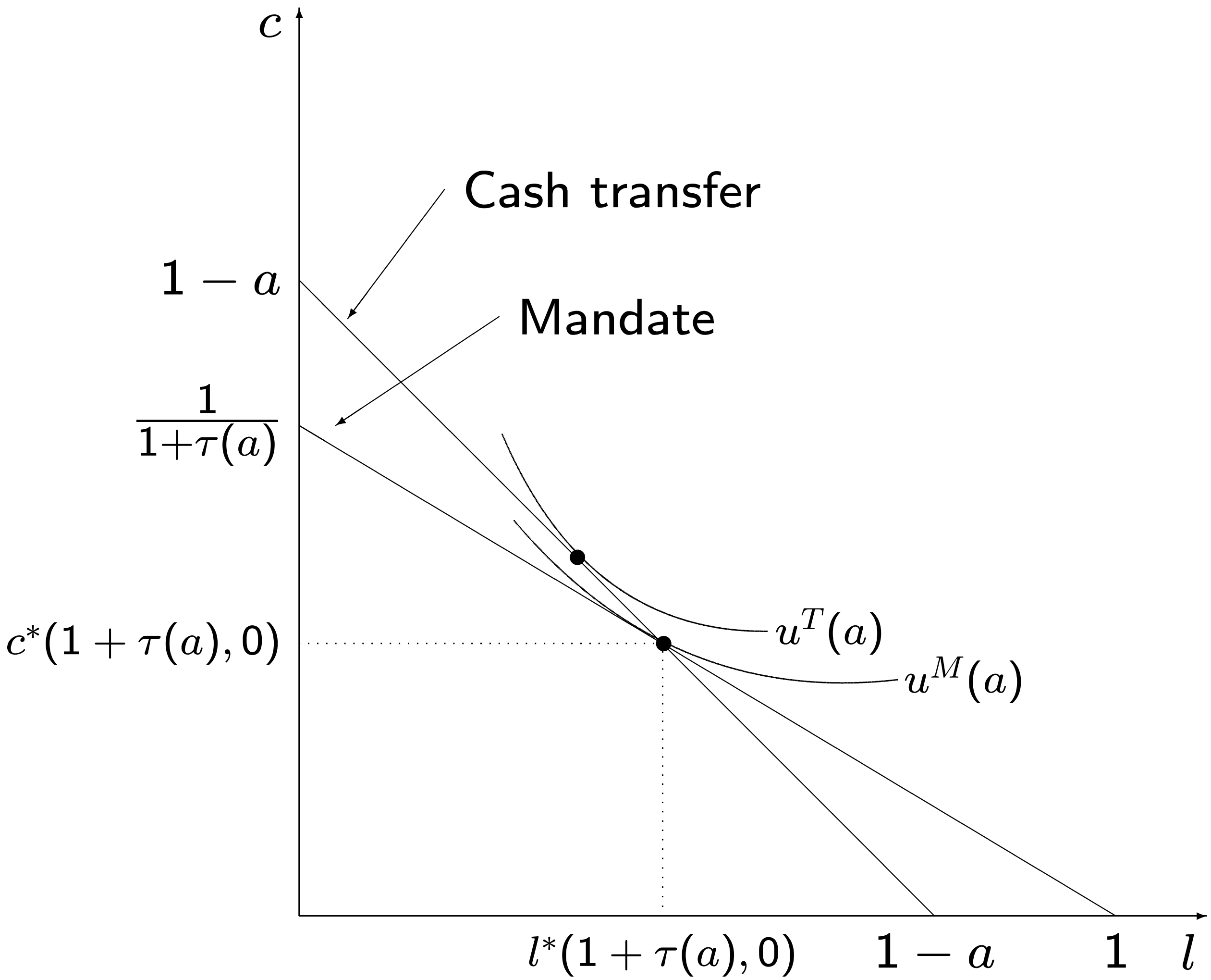
- $t = 0$ and mandate

Equilibrium Prices (optimal bundle $(c^*(p,t), l^*(p,t))$)

- if no mandate, zero profits $\Rightarrow p = 1$

- if mandate, zero profits $\Rightarrow p_m(a) = 1 + \tau(a)$, where $\tau(a)$ solves $\tau(a)c^*(1 + \tau(a), 0) = a$

Proposition 1: Under complete information cash transfers are always optimal



Symmetric but Incomplete Information

$u(c,l) = c^{\alpha} l^{1-\alpha}$, cost of the project $a \in \{a_l, a_h\}$, $a_h < b$, $a_h < 1$

As $\alpha \to 1$ the deadweight loss from mandate disappears and the mandate has the advantage that the project is always funded at cost

- expected utility under mandate

$$E(u^M) = (1 - a_l)\,\mathrm{Pr}(a_l) + (1 - a_h)\,\mathrm{Pr}(a_h) + b$$

- utility under transfer a_h

$$u^T(a_h) = (1 - a_h)\,\mathrm{Pr}(a_l) + (1 - a_h)\,\mathrm{Pr}(a_h) + b < E(u^M)$$

- utility under tranfer a_l

$$u^T(a_l) = (1 - a_l)\,\mathrm{Pr}(a_l) + (1 - a_l)\,\mathrm{Pr}(a_h) + b \cdot \mathrm{Pr}(a_l) < E(u^M)$$

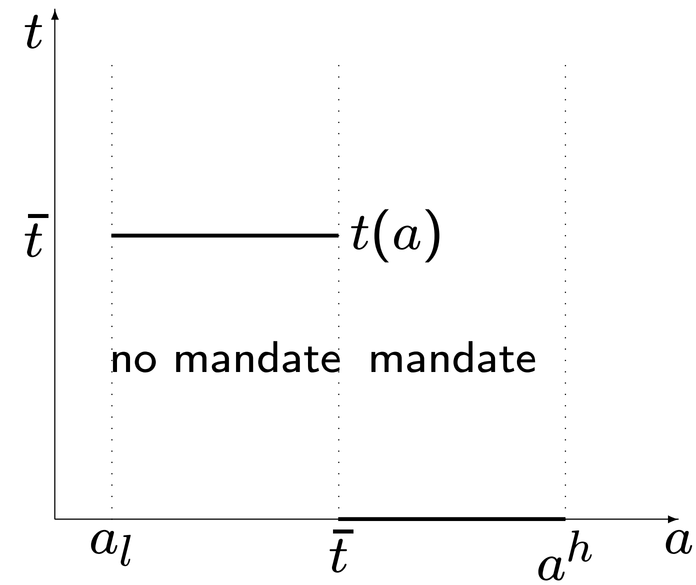
Asymmetric Information
The Mechanism Design Problem

Proposition 2 The optimal provision takes one of the following forms:

$$\begin{array}{ll} t(a) = \bar{t},\ m(a) = 0, & a \leq \bar{t} \\ t(a) = 0, m(a) = 1, & a > \bar{t} \end{array}, \quad \bar{t} \in [a_l, a_h]$$

or

$$t(a) = \tilde{t}, m(a) = 0, \quad \forall a, \qquad \tilde{t} < a_h$$



Citizens solve

$$\max_{\bar{t}\in[a_l,a_h]} F(\bar{t})u^T(\bar{t}) + \int_{\bar{t}}^{a_h} u^M(a)dF(a)$$

Optimality condition:

$$f(\bar{t}) \underbrace{\left(u^T(\bar{t}) - u^M(\bar{t})\right)}_{-(\text{deadweight. loss})} = F(\bar{t}) \underbrace{\frac{du^T(\bar{t})}{dt}}_{\text{overpayment}}$$

Asymmetric Information
The Signaling Model

No commitment.

Special interest sends signal $\sigma(a) \in S$.

Citizen chooses a policy $m(\sigma), t(\sigma)$

Proposition 3. All pure strategy equilibria of the signalling game have either

$$\begin{array}{lll} (t \circ \sigma)(a) = \bar{t}, & (m \circ \sigma)(a) = 0, & a \leq \bar{t} \\ (t \circ \sigma)(a) = 0, & (m \circ \sigma)(a) = 1, & a > \bar{t} \end{array}, \quad \bar{t} \in A$$

or

$$(t \circ \sigma)(a) = t_0, \quad (m \circ \sigma)(a) = 0 \ , \qquad \forall a \qquad t_0 < a_h$$

Proposition 4 Suppose the solution to the mechanism design problem is a constant transfer to all types. Then any equilibrium of the signalling game has a constant transfer to all types.

Income maintenance through minimum wage

- special interest: low skill workers, reservation wage ph ($h =$value of leisure)
- citizen: high skill workers, marg. prod $=1$.
- citizen's objective: guarantee a minimum real consumption W, with $W > h$
- policy: either cash transfer $(W - h)p$ to make up for the low skill or mandate firms to provide a minimum wage Wp
- informational problem: don't know the low skill workers' reservation wage