EC330-3-SP – Lecture 9

Privatisation: Theoretical Analysis

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Plan of talk

- **Introduction**

1. Privatisation during transition
   1. Objectives
   2. Constraints
2. Models of privatisation
   1. Mass privatisation
   2. Privatisation through sale

- **Wrap-up**

Aim and learning outcomes

- **aim**: understand the basic theory behind privatisation – in general as well as particularly with respect to transition reforms
- **learning outcomes**
  - discuss the objectives and constraints of post-socialist privatisation
  - analyse theoretically mass privatisation: irreversibility
  - analyse theoretically standard privatisation: underpricing

Post-socialist privatisation: objectives

- **definition:** the transfer of state ownership (and corporate governance) into private hands
- **objectives (economic)**
  - higher *efficiency*
    - better managers: match b/n assets to privatise and managerial talent
    - better incentives: to managers after they have been appointed
      - problem posed by the separation of ownership and control
      - mitigated under markets due to the disciplining effect of competition
  - *restructuring*: reorientation in the new economic conditions
    - defensive: survival => cut down costs and scale down unprofitable activities
    - strategic: enhanced performance => long-term plan, innovation, investment

Post-socialist privatisation: constraints

- **stock-flow (economic)**
  - *no* (much) pre-existing private wealth under socialism
  - *stock* of state assets could at best be sold against *flow* of annual savings
- **fiscal (financial)**: redefining *role of state* => government budget
  - *revenue* side: tax policy as a new tool
  - *expenditure* side: cannot be compressed beyond a minimal threshold
- **political (social)**
  - *unique* historical situation of "dividing the remains" of the communist state: firm insiders, outside investors, … =>
  - *rent-seeking*: creates confusion over property rights by trying to constantly redistribute them through political means, implying subsequent redefinitions of the boundaries of existing laws
- **informational**: privatisation *agency* => best buyer
- **administrative**: clarifying and *transferring* ownership rights

Roland-Verdier (1994): assumptions

- a continuum L of **workers** and of **firms**, both normalised to 1
  - socialist firms lose money, i.e. their output $y_s < w$, the fixed wage to workers, so subsidies are paid to cover the losses $w - y_s$
  - with a tax rate on workers income of t, the government budget constraint is $tw = w - y_s$
- **when a firm is privatised**
  - it adopts the production function $y_p = min\ [a_p(n_p),\ l_p]$, where l_p is the amount of labour in the firm, $a_p(n_p)$ is the productivity of capital and n_p is the number of privatised firms
  - it chooses l_p endogenously to equal $a_p(n_p)$
- first consider $a_p < 1$ to be a **constant**
  - so that when a firm is privatised it sheds labour $1 - l_p = 1 - a_p$
  - however, privatisation makes firms more productive: $y_p = l_p > w > y_s$
  - wage is downward-rigid so it remains at level w
- a continuum of **investors** on $[0,1]$: when taking control of the firm, incur a fixed sunk cost f to restructure it

Roland-Verdier (1994): timing

1. all **firms** are **offered** to private investors
2. **investors** decide independently upon entry and acquisition of firms
3. after entry, the **government** reconsiders its privatisation policy
   - and *may reverse* a given number of deals **if** its preferred amount of privatisation is less than the achieved one
   - **if** however the preferred level of privatisation is higher, the government *cannot force* new investors to enter
4. **production** takes place and **unemployment** occurs

Roland-Verdier (1994): government

$$\max V(n_p) = n_p(1-a_p)U(0) + [1 - n_p(1-a_p)]U[w(1-t)]$$

$$s.t. [1 - n_p(1-a_p)]wt = (w - y_s)(1 - n_p)$$

$$\frac{dt}{dn_p} = \frac{w - y_s}{w} \frac{-a_p}{[1 - n_p(1-a_p)]^2} < 0$$

$$V'(n_p) = -(1-a_p)U[w(1-t)] + U'[w(1-t)](w - y_s)\frac{a_p}{1 - n_p(1-a_p)} = 0$$

Roland-Verdier (1994): investors

$$\max\left(0, \frac{n_p - n_p^*}{n_p}\right)$$

$$E\pi_p = (1 - w)a_p \qquad\qquad n_p < n_p^*$$

$$E\pi_p = \frac{n_p^*}{n_p}(1 - w)a_p \qquad\qquad n_p \geq n_p^*$$

=> *unique* Nash equilibrium: <u>Fig. 4.1 in Roland (2000)</u>

Roland-Verdier (1994): externality

- term in production function *redefined* => <u>Figs. 4.2, 4.3, 4.4 in Roland (2000)</u>

$$a_p(n_p) = \max\left[a_p, a_p + \frac{1-a_p}{1-\tilde{n}}(n_p - \tilde{n})\right]$$

$$V(\gamma, n_p) = n_p(1-a_p)U(\gamma\pi_p n_p) + [1 - n_p(1-a_p)]U[w(1-t) + \gamma\pi_p n_p]$$

$$\frac{\partial V(\gamma, n_p)}{\partial n_p} = -(1-a_p)\{U[w(1-t)+d] - U(d)\} +$$

$$+U'[w(1-t)+d](w-y_s)\frac{a_p}{1-n_p(1-a_p)} +$$

$$+\gamma\pi_p\{n_p(1-a_p)U'(d) + [1-n_p(1-a_p)]U'[w(1-t)+d]\}$$

Models of *mass* privatisation: lessons

- Roland-Verdier (1994): **giveaway**
  - **can** eliminate backlash and policy reversal
  - but **cannot** eliminate *multiple* equilibria in a particular *intermediate* range of investors' net expected profits
- Schmidt (2000): highlights the difference b/n *mass* privatisation favouring **outside investors** vs **firm insiders**
  - giveaway of assets to the population at large – and not mostly to insiders – leads to more irreversibility of reforms, due to the greater diversification embodied in the portfolio of shares purchased by voters with their vouchers
  - by contrast, workers receiving shares in their own enterprise – only or primarily – will hold much more risk
  - since they face lower risk, the stake in the continuation of privatisation of voters in a scheme of giveaway of state assets to outside investors will be greater relative to favouring insiders

Biais-Perotti (1998): set-up

- 3 classes of citizens: rich, median and poor
  - having in each period exogenous income of w_r, w_m and 0, respectively
  - average income is thus $\overline{w} = \alpha_r w_r + \alpha_m w_m$
  - median income is assumed lower than average income: $w_m < \overline{w}$
- 2 periods
  1. the incumbent right-wing government
     - decides on the income tax t_1 and the level of redistribution g_1
     - even when there is no redistribution, some taxation is needed to cover the fixed cost s of state administration
     - decides on a privatisation policy, following the interests of the rich
     - citizens, in turn, decide how many assets they want to buy.
  2. after shares have been purchased, there are new elections
     - the new government in period 2 will decide again on tax (t_2) and redistribution (g_2) policies
     - it may also decide whether to expropriate the privatised assets or not.
- a privatised firm
  - can generate profits π_H provided some effort e by management
  - without effort, the firm generates zero profit $\pi_L = 0$, which is assumed suboptimal since $\pi_H - e > 0$
  - management is assumed to provide no effort if it expects expropriation

Biais-Perotti (1998): lessons on (standard) privatisation through *sales*

- key analytical result: condition under which the median voter will be inclined to re-elect the right-wing government

$$q_m > q_m^* = \frac{\overline{w} - s}{\pi_H} \frac{\overline{w} - w_m}{\overline{w}}$$

  with q_m the quantity (number) of shares held by the median citizen
  - the higher the income inequality (the second multiple above), the higher must be q_m to persuade the median voter to vote for the right-wing incumbents a higher number of shares is needed
  - the higher π_H (which can be interpreted as both the efficiency gains from privatisation and the size of privatisation), the lower q_m
- since the inequality above may not be satisfied, the right-wing government in power will have an incentive to underprice strategically:
  - in case $q_m(p_e) < q_m^*$
  - the right-wing government will have to set a price p^* for which $q_m(p^*) = q_m^*$
  - in that case the rich will be rationed, holding less shares than otherwise
  - but they are still better-off, having avoided the left-wing party coming to power

Concluding wrap-up

- **What have we learnt?**
  - how privatisation is defined and why it matters for transition
  - what is the basic theory behind:
    - the objectives and constraints of privatisation in transition countries
    - mass privatisation
    - standard privatisation through sales
- **Where we go next**: to the variety of experiences with post-socialist privatisation