

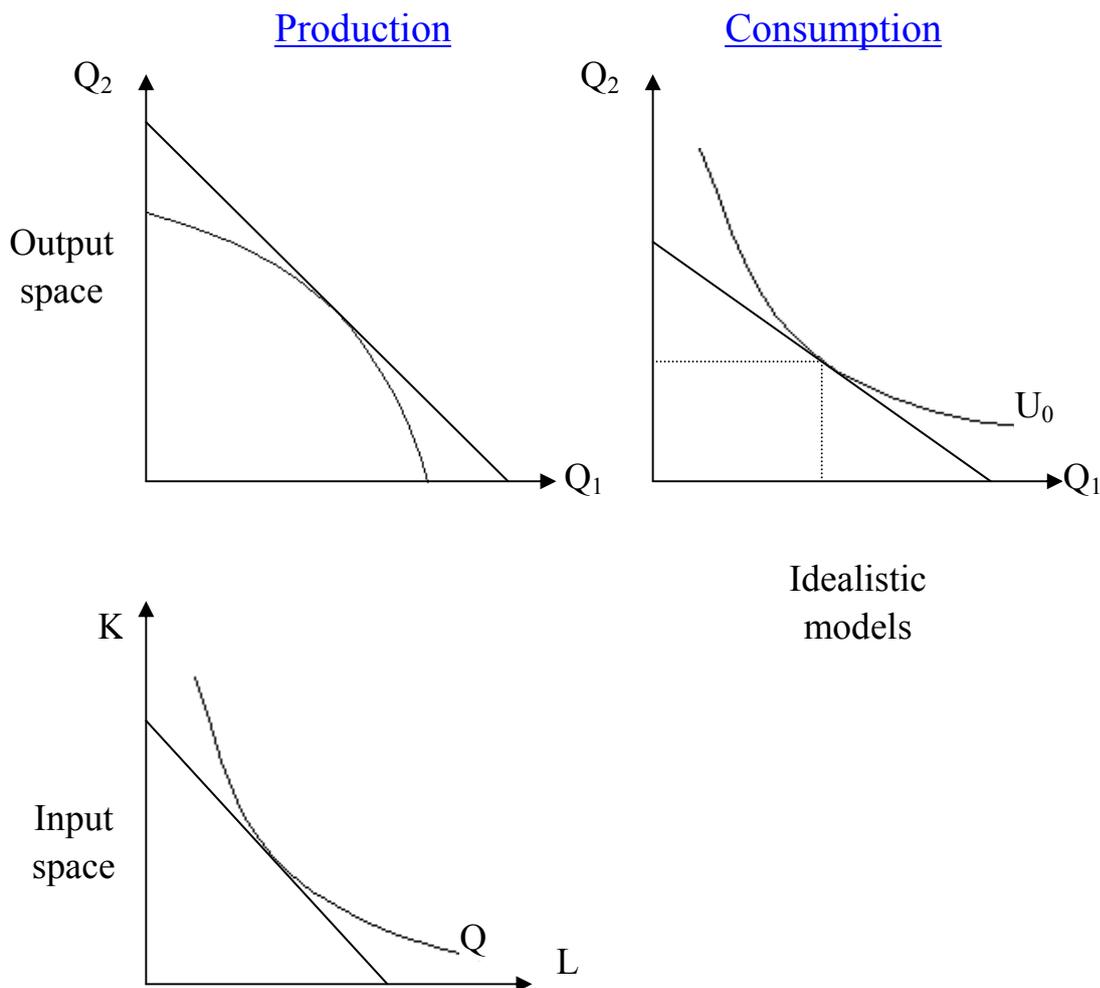
## Comparative Industrial Systems

### Components of Economic Efficiency (see T. Buck)

	Micro	Macro
<b>STATIC</b>	(i) (a) Allocative (b) Technical (c) Distributive	(ii) (a) Material living standard (b) Unemployment (c) Inflation
<b>DYNAMIC</b>	(iii) (a) Current/future consumption (b) Responsiveness of economic units	(iv) (a) Extensive growth (b) Intensive growth

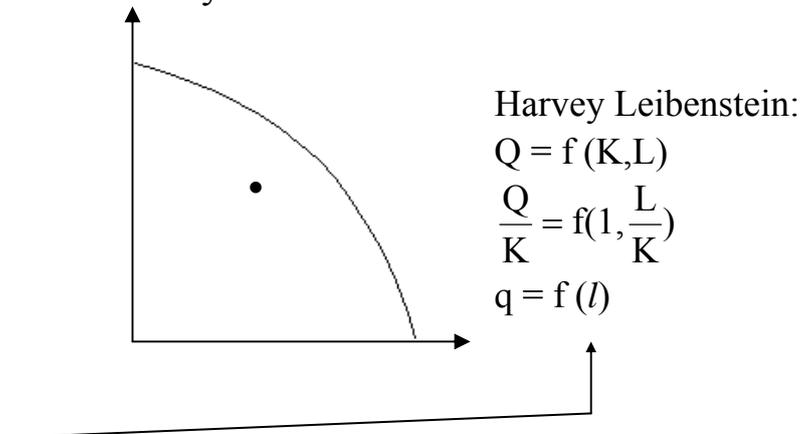
### (I) Theories of the capitalist firm

#### 1. The Neoclassical Paradigm



## 2. Realistic analysis in production

### (i) Efficiency vs. X-efficiency



No such well-defined function exists. Labourers have vested interest to minimize efforts subject to constraints such as “norms”, “threat of being fried” etc.

- (ii) profit-maximization vs. multi-objectives (Baumol): social constraints, managerial self-interest---e.g. sales revenue maximization (SRM), informational uncertainty.
- (iii) maximization vs. satisfying behaviour (Herbert Simon)
- (iv) firms as organizational / market failures (Coase & Williamson)
- (v) firms as conflicts between capitalists and workers (Bowles & Gintis)

(Realistic analysis in consumption?)

## **(II) Theories of centrally planned enterprises (CPEs)**

1. The idealist model: the CPE as a small unit in a huge system of material balances.
2. Less idealistic models: because of imperfect planning, uncertainty, informational problem and non-altruism.

Under such circumstances, planners cannot control the CPEs perfectly. A mixed system may be used: output maximization subject to some “efficiency” constraints (e.g. cost or profit indicators).

**Principal-agent theory** (委托人—受託人理論): a branch of game theory where there is asymmetrical information and implementation abilities, e.g. optimal incentive/sanction mechanisms, optimal contracts, optimal regulation/market design.

**The Ames model as a benchmark:**

$$\max U = \alpha q + (1 - \alpha)\pi \quad \text{-----} \quad (1)$$

$$\text{where } \pi = pq - C(q) \quad \text{-----} \quad (2)$$

$q$  – output,  $\pi$  - profit,  $p$  – price,  $C$ - cost,  $\alpha$  and  $1 - \alpha$  represent the relative weights assigned to output and profit targets.  $U$  is enterprise utility, which can be retained funds, bonus money etc.

Sub (2) into (1),

$$U = \alpha q + (1 - \alpha) [pq - C(q)] \quad \text{-----} \quad (3)$$

$$\frac{\partial U}{\partial q} = \alpha + (1 - \alpha)p - \frac{(1 - \alpha)\partial C}{\partial q} \quad \text{-----} \quad (4) = 0$$

where  $\frac{\partial C}{\partial q}$  = marginal cost (MC)

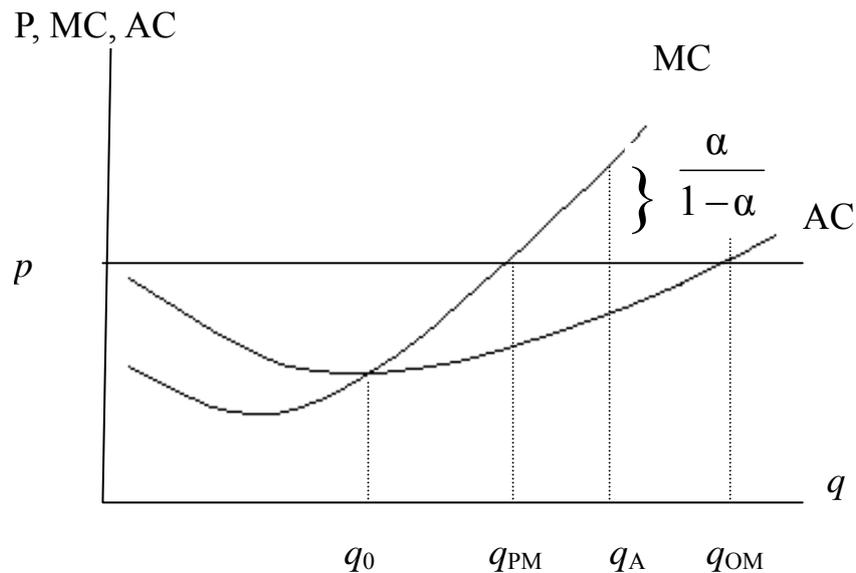
$$\text{From (4)} \quad MC = \frac{\partial C}{\partial q} = \frac{\alpha + (1 - \alpha)p}{1 - \alpha} = \frac{\alpha}{1 - \alpha} + p \quad \text{-----} \quad (5)$$

**So  $MC \neq p$  if  $\alpha \neq 0$  (i.e. if there is quantity target).**

If  $\alpha = 0$ , (i.e. there is no quantity target), we are back to idealistic behaviour of the capitalist firm

( $MC = p \rightarrow q_{PM}$ )

$$\text{From (5)} \quad MC - p = \frac{\alpha}{1 - \alpha}$$



So  $q_A$  is the “Ames” equilibrium for the CPE where  $0 < \alpha < 1$ .

$$\text{Since } \frac{\partial \text{MC}}{\partial \alpha} = \frac{\partial [\alpha / (1 - \alpha)]}{\partial \alpha} = \frac{1}{(1 - \alpha)^2}$$

So MC rises further above  $p$  as the relative weight ( $\alpha$ ) on output in the utility function increases.  $q_{om}$  is output-maximizing output (s.t. “non-loss” –  $AC \leq p$ )

Now, the excess of MC over  $p$  at equilibrium output  $q_A$  represents allocative losses: “firms which try to maximize output will use more inputs under given conditions and use them less productively than firms which seek to maximize profits.” One reservation about such a conclusion is that [because prices are not shadow prices, profit maximization may not be optimal.](#)

It may be assumed that planners can control  $\alpha$  directly through manipulation of promotion opportunities for enterprise managers and access to particular goods on the parts of the enterprise. So if there is price distortion, e.g. [if the price system undervalues the output of a firm relative to its inputs, planners can place greater emphasis on output \(i.e. higher  \$\alpha\$ \).](#)

So, the intermediate target is a trade-off between output-maximization and profit-maximization under a situation of “non-scarcity-reflecting” prices. The solution may not be first-best, but may be second-best.