



CEE Growth & Development

Productivity: Technology and Efficiency

Michælmas 2013

Productivity

$$Y_t = A_t K_t^\alpha (h_t L_t)^{1-\alpha}$$

$$\underbrace{Y_t}_{\text{output}} = \underbrace{A_t}_{\text{productivity}} \bullet \underbrace{K_t^\alpha (h_t L_t)^{1-\alpha}}_{\text{factors of production}}$$

Measurement

$$A_t = \frac{Y_t}{K_t^\alpha (h_t L_t)^{1-\alpha}}$$

Definition

Productivity is the effectiveness with which factors of production are converted into output.

$$A_t = T_t \times E_t$$

Technology under Communism



1980

2012



LADA. Perfect From The Beginning

Development Accounting for Technology Leaders

	United States	Japan	Germany
Automobiles	100	127	84
Steel	100	110	100
Food Processing	100	42	84
Telecommunications	100	51	42
Aggregate Productivity	100	67	89

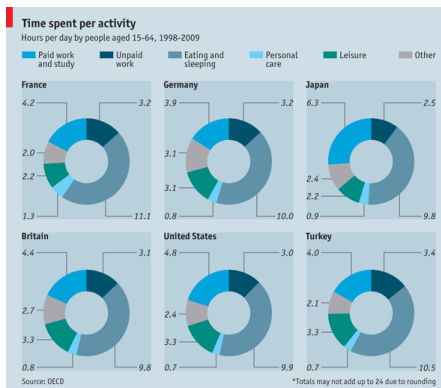
Efficiency

Definition

Efficiency is avoiding a waste of time, effort, or resources

Efficiency

- Types of inefficiency
 - Idle resources
 - unemployment, overeducation, and the like



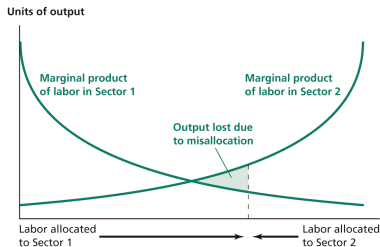
Efficiency

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 - (civil) wars, robbery, 'krysha', rent-seeking and kleptocracy



Efficiency

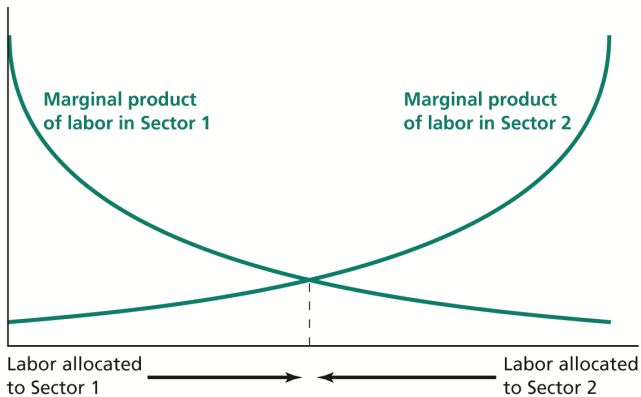
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 - Idle resources
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 - Misallocation of Factors



Efficiency Loss

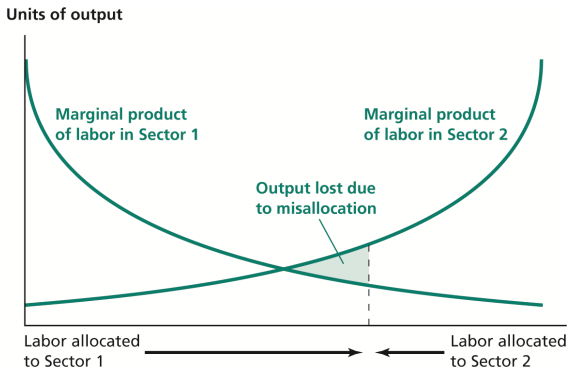
Misallocation of factors

Units of output



Efficiency Loss

Misallocation of factors



Subsidies to sectors, wage controls, import monopolies, ISI, and the like.

Averages instead of marginals: Nepotism

Efficiency

Types of inefficiency

- Idle resources
 - unemployment, overeducation, and the like
- unproductive activities
 - (civil) wars, robbery, rent-seeking and kleptocracy
- Misallocation of Factors
- Technology Blocking and Luddites
 - Creative destruction
- Missing markets
 - e.g. financial
- Institutional inefficiencies