

## Firm in Transition

### Topic 2

## Resource Constrained vs. Demand Constrained Systems

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## Stylized Facts

### Phenomenon of shortage in CPEs

– Based on Janos Kornai

### Consumers constantly face shortage of goods

– People are on waiting lists to be on a waiting list for... whatever

- Corruption, bribery

– Other shortages present:

- Labor
- Capital
- just name it... =>

- General failure in CPEs



## Shortage is

- |   |  |
|---|--|
| • Bad   | • Good                                 |
| – wait for supply                                 | + Full employment                      |
| – different goods supplied or used as substitutes | + No unused capital                    |
| – no satisfaction at all                          | + No obstacles to production expansion |
| – shortage causes disturbances in production      |  |
| – no quality incentives on suppliers' side        |  |



## Microanalysis of Producer Firm

- Constraints to increase production

– Resources

- Physical and technical nature of the constraint

– Demand

- Sales cannot exceed demand

– Budget

- Expenses cannot exceed initial budget plus proceedings from the sales



## Fixed Proportions of Inputs

- Capitalism (as defined by Marx)
  - Demand constrained
- Socialist economy (or CPE)
  - Resource constrained
  - This does not imply 100% usage of resources
  - Nor efficient usage of resources

Reason:



## Fixed Proportions of Inputs - cont.

Reason:

Material planning (I/O table) =>

- Leontieff technology
- (strict) complementarity of resources & fixed technology
- fixed proportions of inputs

- Slack & Shortage can occur simultaneously

– half of the factory is idle  
– other half is having extra shifts



### Shortage

- To find a shortage we should ask:
- What is the effective constraint in the production?
- Measurement problem:
  - Shortage cannot be described as a macro-aggregate
  - Reasons:
    - There is forced substitution in the economy
    - Slack and shortage can occur simultaneously

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### Definition of Shortage

Shortage is a collection of millions of sub-micro-level elementary shortage events

#### Examples

- Somewhere some product or service is not available
- Some input is not available when needed
- Improvisations to overcome momentarily shortages
- Chronic shortage
  - millions of elementary shortages take place constantly

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### SBC vs. HBC Firms

- HBC
    - Iron-like discipline. The firm can spend only available resources. Firm is acquiring as much as it needs but not more since misallocation or over-accumulation can lead to death of the firm.
  - SBC
    - The above does not hold.
- Can be detected by two phenomena:

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### Detection of SBC

- Survival
  - HBC: financial difficulties can lead to bankruptcy
  - SBC: state (or someone) helps out of the trouble
- Growth of firm
  - HBC: growth depend on the firm's financial position and prospects
  - SBC: growth is not tied to current situation and future prospects, return of the investments do not play a role

#### Classic socialism: SBC

Financial reforms could not eliminate this problem

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### Demand of Firm

- HBC
  - Buyer voluntarily refrains from purchasing and accumulating excessive resources (material, capital, labor) => it will not become "too big" and "too large", the limits of the firm are given by the demand for its products
- SBC
  - Demand is price-inelastic and does not depend on financial income
  - Shape of demand differs from the standard one
    - => The demand for inputs is almost insatiable

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### Consequences

- What prevents infinite hoarding?
  - Physical storage limits
  - public opinion and superior authorities
  - some spending limits might be also present
- Consequences?
  - Walras Law does not hold
  - Says Principle does not hold

**Standard axioms of microeconomics are not valid!**

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### Model Assumptions

- Classical socialist economy
- Short-term analysis
- Stationary economy
- Only goods (not services)
- Two types: Households and Firms
- Autarky
- Two sector economy
  - I = Producer goods
  - II = Consumer goods
- Classical Marxian classification



### Class II = Consumer Goods

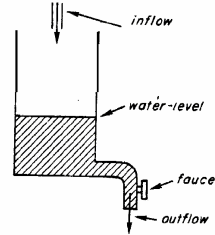


FIGURE 1

- Suppose fixed inflow of goods
- Faucet works
  - Households are hard-budget constrained



### Class I = Producer Goods

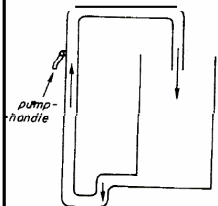


FIGURE 2

- No faucet
  - outflow is driven by demand
- Empty reservoir
  - = resource constrained economy (shortage & slack)
- Pump
  - Soft budget = high demand
  - Buyers queue up in front of the producers and demand even more
- Self-generating vicious circle of shortage



### Class I + II = Economy

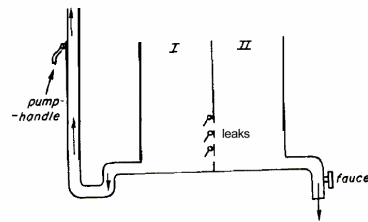


FIGURE 3

- Shortage breeds shortage
- Leaks:
  - Unequal competition between firms and households
  - Example: car



### Conclusions

Shortage in Sector II (households) does not depend only on the supply of II, price and income of households but also on the strength of siphoning off effect of the firm sector

Investment hunger:  
Each firm wants to grow to eliminate shortage...

Sector II - fully monetarized  
Sector I - seemingly monetarized  
=> Inflation pressures

