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11.481J / 1.284J / ESD.192J Analyzing and Accounting for Regional Economic Growth  
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# AGGLOMERATION VERSUS DISPERSAL ECONOMIES

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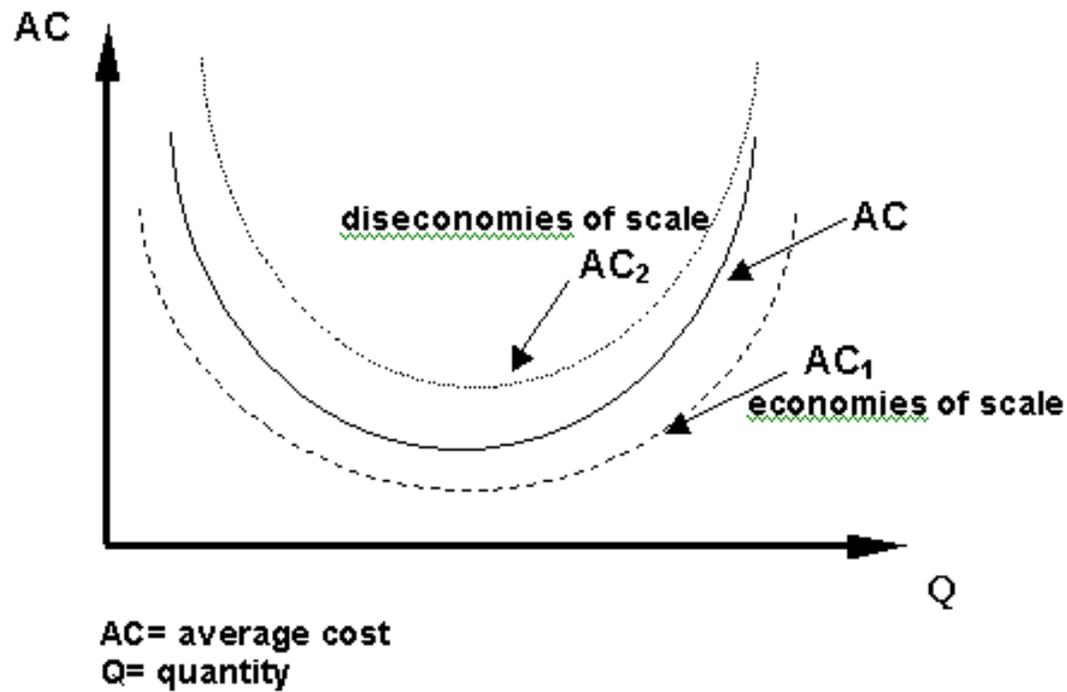
# HYPOTHESIS

**Regional economic growth can be enhanced/retarded by two types of economies of scale**

- **Agglomeration economies/diseconomies**
- **Dispersal economies/diseconomies**

# AVERAGE COST CURVE FOR THE FIRM

## Agglomeration and Dispersal Economies/Diseconomies



# DISPERSAL ECONOMIES/DISECONOMIES

**A dispersal economy (diseconomy) is external to the firm, thus it moves the entire average cost curve of the firm down (up) at all output levels, although the old and the new cost curves do not have to be parallel at different scales of output.**

# **AGGLOMERATION ECONOMIES/ DISECONOMIES**

**An agglomeration economy/diseconomy has the same effect on the average cost curve as a dispersal economy/diseconomy, but different factors affect it.**

# TWO TYPES OF AGGLOMERATION ECONOMIES/DISECONOMIES

- **Urbanization--agglomeration economies** accruing to a firm from the many different suppliers and producers locating in a particular region, each of which takes advantage of the presence of banks, universities, labor, etc. that service diverse industries.
- **Localization--agglomeration economies** accruing when similar firms locate in one region, each of which takes advantage of the various facilities in the region (trade associations, training institutes, etc.).

Hoover (1937).

# AGGLOMERATION ECONOMIES

## TABLE 1

Agglomeration/Dispersal Concept	Type of Agglomeration/Dispersal Economies/Diseconomies and Networks
<b>Old concepts</b>	
Industrial Cluster	Internal, Urbanization, Scope
Industrial Complex	Internal, Localization, Social, Scope
Industrial District	Internal, Localization, Social, Scope
Industrial Growth Pole/Center	Internal, Urbanization, Scope

# AGGLOMERATION ECONOMIES

## TABLE 1 (continued)

Agglomeration/Dispersal Concept	Type of Agglomeration/Dispersal Economies/Diseconomies and Networks
<b>New concepts</b>	
Chain (Consumer-driven)	Scope, Horizontal networks
Chain (Producer-driven)	Internal, Vertical networks
Chain (Supply)	Internal, Vertical networks, Dispersal
Interfirm Network	Dispersal, Scope

# INDUSTRIAL CLUSTERS

**“geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs, such as components, machinery, and services, and providers of specialized infrastructure.”**

**(Porter 1998, p. 78)**

**According to Porter’s definition, all learning regions are clusters.**

# INDUSTRIAL DISTRICTS

**An industrial district is a production system dominated by small firms that are distinguished by being flexible, specialized, and nonmobile and that occur in a technologically dynamic, regionally rooted system of firms.**

**Storper, 1997, pp. 7-8.**

# INDUSTRIAL DISTRICTS AND FLEXIBLE SPECIALIZATION

**Sable (1989, 1997) and Best (1990) use the term “flexible specialization” to show policy makers that small and medium-size firms, research and development institutes, and contractual relations are important elements of the way firms can share distribution, production inputs, information, and technologies.**

# **GROWTH POLES/CENTERS**

**“ . . . economic space consists of centres (or poles or foci from which centrifugal forces emanate and to which centripetal forces are attracted” (Perroux, 1950, p. 96).**

**Perroux mentioned that establishments of each firm are “geographically dispersed,” and “bounds of organization of varying strength” are formed among them (Perroux, 1950, p. 94).**

# INTERFIRM NETWORKS

**". . . a network organization linking firms or economic agents represents an intermediate 'system of governance' that lies between hierarchic organization ('the firm') on the one hand, and 'classical' or spot transactions ('the market'), on the other." Teubal, Yinnon, and Zuscovitch. 1991. "Networks and Market Creation." *Research Policy*, p. 381.**

# TYPES OF NETWORKS

- **Interfirm (component supplier-assembler networks and user-producer networks).**
- **Employment networks.**
- **Innovator networks.**
- **Information and communication networks.**
- **Social networks,**
- **Political networks.**

# INTERFIRM NETWORK CHARACTERISTICS

- **Recurring transactions and interactions.**
- **Long-run stable relationship.**
- **Creation of pool of knowledge; therefore, contributes to interfirm learning.**
- **May or may not cross spatial boundaries (compare interfirm networks within an industrial district, such as Silicon Valley, versus networks across oceans, such as communication networks).**

# LEARNING REGION DEFINED

- A learning region is one in which industry, community, government, and educational centers in a region all work together in collective-learning environments to help the region develop.
- For the firms, the learning may be based on intrafirm, interfirm, and/or regional coalitions.

# LEARNING REGIONS AS DEVELOPMENT COALITIONS

**Development coalitions range**

- **from small and medium workplaces**
- **to regions**
- **to larger networks of firms**
- **to entire nations.**

**Ennals and Gustavsen (1999)**

**In this case, not all learning regions are clusters.**

**Ennals and Gustavsen (1999)**

# FOUR TYPES OF KNOWLEDGE

- **KNOW-WHAT**--knowledge of facts; easy to codify.
- **KNOW-WHY**--knowledge of principles that exist in nature, the human mind, and the society; some is relatively easy to codify.
- **KNOW-HOW**--knowledge of skills, capabilities, and other knowledge that in today's world creates incentives for firms to develop networks to exchange this know-how; only some of which can be codified.
- **KNOW-WHO**--socially embedded knowledge learned from customers, contractual arrangements, etc.; difficult to transfer because it is tacit knowledge).

Lundvall and Johnson (1994)

# FOUR TYPES OF PROXIMITY

- **physical (geographical) proximity,**
- **organizational (interaction, collaboration, shared workplace practices, and training) proximity,**
- **cultural (common language, modes of communication, customs, conventions, and social norms) proximity, and**
- **electronic proximity—the form and intensity of electronic communication between economic agents.**

**Gertler (1995); Gilboy, Oye, and Parker (1995, p. 5)**

# LUNDVALL'S FINDINGS ON AUTOMATION

**“Firms introducing new automation and information technology for the first time experience a substantial slow-down in terms of productivity growth as compared to firms which do not use automation technology.”**

Lundvall, 1996, p. 11

# **INNOVATION REQUIRES COOPERATION**

**Continuous innovation, timeliness, and rapid product development requires cooperation among firms.**

**(Saxenian 1994)**

**Cooperation allows firms to share research and development costs, access to credit, training, etc.**

**(Sabel 1992)**

# REGIONAL AND GLOBAL SUPPLY CHAINS

**Firms have hierarchical organization (contrasts with horizontal organization in learning region),**

**Supply chain extends from the raw-material supplier to the ultimate consumer,**

**Ability to use these attributes and scientific-management procedures to reap “economies of time.”**

**(Chandler 1977)**

# CONCLUSIONS

**My hypothesis should be proven or shown to be false with empirical tests.**

**Tests can be done related to agglomerations in China, the United States, or any other country.**

**Such tests will enrich the regional and innovation literature and will help show the role played by ICT in regional development.**