

ECONOMIC CLUSTERS

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I've been asked to speak today about economic clusters as a tool for planning regional or local economic development policy. My aim is to introduce a concept that might be useful in the Russian regional development context, rather than to highlight my own research. I want to acknowledge first that my talk is based on research and writing done by others, especially Peter B. Doeringer and David G. Terkla (1995), who have written an excellent summary on the topic.

Over the past few decades in the U.S., heated competition for business investment has emerged between cities, and also between states. This competition has often been based on offering the lowest taxes, the biggest tax break, or the biggest subsidies to business. The bidding wars that sometimes develop clearly benefit companies, but city and state governments often pay far too high a price for business investment in their efforts to outbid each other. Businesses may also get tax breaks for a number of years, and then leave after the tax incentive period is finished. There are a number of different ways, in which officials have tried to solve these problems. One of these has been to think more carefully about which firms to attract or to encourage, so that they will yield greater benefits to the area and will also be more likely to stay. Economist Michael Porter has advocated recruiting or assisting firms that have a competitive advantage in the region. These are companies that can be expected to stay, to grow, and to provide long-term returns in terms of both jobs for residents and tax revenues for governments.

Promoting the development of economic clusters is now popular in state and local economic development. Clusters of firms develop in an area because: 1) they enjoy certain regional advantages, and 2) also benefit from interaction with each other.

These firms enjoy positive externalities from locating in the same region. The positive externalities, or spillover benefits from clustering, lower costs for individual firms and also promote innovation through cooperation. In vertical clustering, where large companies and supplier firms are located in the same area, transportation costs and transaction costs are lower. Innovation may also be encouraged because firms and their suppliers share ideas about how to streamline processes and how they can improve products together. In horizontal clustering, where a number of similar firms congregate in a particular area, economies come from shared public goods and shared labor pools that support particular industries. University-based research and development, specialized expertise and experience in the workforce, and vocational training resources are some of the advantages of this horizontal clustering. Employees who move from one firm to another help to spread expertise, information, and technology transfer within the cluster. So, clustering makes firms more productive by lowering costs and also diffusing innovation, promoting further growth.

Let me give some examples of clustering in the United States. The auto industry has turned to "just in time" production to save money. Suppliers are in the same general

region, and they work with auto manufacturers to develop new products, innovate, and streamline processes. This, of course, is an example of vertical clustering. The concentration of different auto manufacturing corporations within the Detroit region also provides an example of horizontal clustering. All of the automakers in the Detroit area also benefit from research and development of robotics and advanced manufacturing processes concentrated in the area, as well as advanced training at regional universities that have strong engineering programs. Even the public schools have pre-engineering studies. There is also a pool of skilled labor – experienced assemblers, machinists, tool and die makers, among others.

In Ohio, there are clusters around the polymer industry in Akron. The technology used to make rubber can be used to make other synthetic materials used in all kinds of products, from household goods to medical instruments. There are a number of companies involved in different aspects of the polymer industry in the Akron region – not just tire companies. The University of Akron has a polymer institute for research and product development.

Another example is Cleveland, which is trying to develop a biotechnology cluster that would take advantage of the area's world-class medical facilities. Cleveland has the world-famous Cleveland Clinic, the Case Western Reserve University Medical School, and university teaching and research hospitals nearby. So, collaboration to develop new biotechnology products and new firms would benefit the hospitals, the individual firms, and the regional economy.

What can the public sector do to encourage cluster development? First, target firms that have a competitive advantage and are likely to develop clusters. How can this be done? A good start is by developing knowledge of production channels, or chains of suppliers, manufacturers, and distributors. These will cut across industries, including banking and transportation, for example, as part of the production channel. Regional or local governments can study data on the industries in their areas, and also ask panels of representatives from local industries about their production channels. The trick is to determine where gaps are and what firms to attract. Firms that use just in time production are likely to want to have suppliers nearby. To understand the potential for horizontal clustering, officials can look at existing firms. What do they have in common? What strengths do they say are unique to your area? How can you build on those?

Government can also provide “public goods” that will benefit particular industries rather than individual firms. There is a public role for providing roads or other infrastructure, for example, that might attract a certain industry or make it possible to connect firms with suppliers. University research and vocational training that serves an industry may also benefit many firms, and be necessary in situations where individual firms are unable to make the necessary investment themselves. Underinvestment in basic research or in job training may occur if individual firms are afraid that others will benefit from their investment (because others adopt the innovation, or workers move to rival firms).

Some cautions are in order as well, for those who want to encourage cluster development.

- 1) There should be diversity as well as specialization in a local or regional economy. Detroit is a good example of the problems that can occur when a single cluster dominates the area economy. Economic development strategies there are trying to make the region less dependent on the automobile industry, even as public and private institutions try to increase efficiency and innovation within the cluster and individual firms.
- 2) Not all industries benefit from clustering. Some, like steel, are decentralizing operations in different countries rather than clustering. In auto, some parts of the process are decentralized, while others are clustered. It's important for economic development practitioners to be familiar with the trends in the specific industries in the area.
- 3) Neighboring governments may need to cooperate because the region for the industry doesn't fit jurisdictional boundaries for regional or local governments.

In general, then, the idea is to attract and support the expansion of firms that have a competitive advantage, and to create through both public and private efforts shared resources and innovation that have the potential to benefit a number of firms, and the community as well.

REFERENCES

Doeringer, Peter B. and David G. Terkla. 1995. Business strategy and cross-industry clusters. *Economic Development Quarterly* 9 (3): 225-237.