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Michael E. Porter

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Competitive Advantage, Agglomeration Economies, and Regional Policy

Michael E. Porter

Harvard Business School
Boston MA 02163 USA

From different directions and traditions, there is a growing interest in the effect of location on competition and economic geography. From my work at the level of the firm and industry, I find in Markusen's (1996) article an opportunity to engage the literature on regional development. Especially since beginning research for my book *The Competitive Advantage of Nations*, I have been interested in how location affects competitive advantage and how firms choose headquarters locations from a strategic perspective.

This article is just one piece of a remarkable body of work by Markusen, and I agree with much of her work. Here I comment on six areas in which I believe her analysis could be sharpened and the literature as a whole extended.

The Scope of Agglomeration Economies

Markusen focuses on generalized urban agglomeration economies in areas such as infrastructure, communications, input access, and available market. I agree that such economies can be significant in developing countries with poor infrastructure, centralized institutions, and a heavy role for the central government. Many of these economies, however, are induced by government policy, not by the underlying economics. With development they should decline in importance. Moreover, as the costs of communications and of moving goods decline and access to distant markets becomes easier, the importance of generalized urban economies diminishes.

My research suggests that agglomeration economies at the cluster level influence competition more profoundly. A cluster is a group of industries connected by specialized buyer-supplier relationships or related by technologies or skills (Porter 1990). The cluster, not the individual industry, is the appropriate unit of analysis on empirical grounds and because externalities may be powerful among related industries.

Regionally concentrated clusters occur in both industrial and developing countries even though many countries, through regional policies, have worked against cluster formation. (Note that I use the word "region" as does Markusen to refer to subunits of nations.) Detailed research, for example, has documented widespread regional clustering within Germany, India, Italy, Portugal, Spain, and the United States (Porter 1990; Porter, Ghemawat, and Rangan 1994; Monitor Company and Porter 1994; Monitor Company 1990).

Contrary to the implication in Markusen's (1996) article, clusters may not be associated with large cities. In Massachusetts, for example, a plastics cluster lies in the western part of the state, jewelry on the Rhode Island border (and across it), fiber optics around Sturbridge, and textiles and apparel near New Bedford and Fall River (Porter and Monitor Company 1991). In Germany, Italy, Portugal, and Spain, clusters also are often located in small and medium-size towns. The phenomenon of regional clustering is highly developed in the United States, perhaps because it is a large economic area with few trade and investment restrictions and considerable homogeneity of language, culture, and laws.

The existence of regional clusters is well documented in case studies, but systematic empirical research is scarce (Enright 1990, Krugman 1991, and Henderson 1994 are the notable exceptions). Empirical research on the geographic distribution of industries and the prevalence of clustering within national economies is complicated by the existence of purely local industries (for example, real estate, retailing, utilities) and by the difficulty of distinguishing between "home bases"—the strategy and development centers for business units or product lines—and branch plants, sales offices, and distribution centers. The standard industrial classification system also confounds research because categories are overly broad, and industries in the same cluster may be assigned to different two-digit sectors. Moreover, data on corporate location patterns are limited and tend to include either all establishments or only the corporate headquarters, with almost nothing in between. Research is needed to distinguish between urban agglomeration economies and cluster agglomeration economies and to explore how both evolve with country development and government policy.

The Nature of Agglomeration Economies

The concept of agglomeration economies in Markusen's (1996) article and much of the literature is focused narrowly on static efficiencies such as economies of scale and access to inputs and markets. Following Hirschman (1958), the notion of backward and forward linkages is usually defined in terms of derived or induced demand.

Such agglomeration advantages are of diminishing importance in modern national and international competition. Access to distant markets has become less costly, so that many companies export early in their development, and sales outside the home state or province constitute the majority of many companies' sales. Sourcing inputs from disparate locations is now the rule. Indeed, because inputs can be efficiently provided from a distance, their availability at home no longer offers much competitive advantage. Input costs and other static efficiencies influence the location of branch plants and other activities sensitive to factor cost, but they influence the location of home bases for product lines and entire businesses much less. Home bases, as used here, consist of general management, core product and process development, and a critical mass of sophisticated production or service provision.

The most important agglomeration economies are dynamic rather than static efficiencies and revolve around the rate of learning and the capacity for innovation. Regional clusters grow because of several factors: concentrations of highly specialized knowledge, inputs, and institutions; the motivational benefits of local competition; and often the presence of sophisticated local demand for a product or service (Porter 1990). Geographic, cultural, and institutional proximity, which may not necessarily coincide with political boundaries, is integral to the rapid flow of highly applied knowledge and the motivational benefits of clusters.

Home bases for product lines tend to emerge and grow in the most favorable cluster locations. Firms gravitate to favorable cluster locations even if corporate ownership is based elsewhere. This preference for locations where there are already established clusters of firms in the same field helps explain why, for example, most world-class pharmaceutical companies have a major presence in the United States, especially around Philadelphia and New Jersey. It may be time to shed the term "agglomeration economies," because it obscures distinctions that are crucial for economic modeling and public policy.

The Extent of Agglomeration or Cluster Economies

Markusen (1996) argues that agglomeration effects (and growth potential) are largest for industries that are high-tech, knowledge-intensive, innovative, and young. She implies that developing countries need these industries because they support a higher standard of living.

Research on industrial and developing economies suggests that this perspective may be misleading. The productivity of an industry is what matters for standard of living. It is not what industries a nation or region competes in that most affects standard of living, but how it competes in them. Italy supports high wages in shoes and textiles, for example, whereas Holland and Denmark create high levels of wealth in agriculture. Most industries today can employ high technology and achieve high levels of knowledge intensity. These characteristics have less to do with industry or maturity than with the competitive environment.

Regional clusters often are a mixture of mature and emerging industries. In the Pittsburgh metropolitan area, for example, the large cluster in metal and materials processing includes not only steel companies, but also companies producing process automation software and advanced process equipment. Young industries do not necessarily gravitate to big cities, as indicated by these examples: Austin, Texas; Salt Lake City, Utah; and Boulder, Colorado. Studies of developing countries with highly interventionist government policies may bias Markusen's view.

The Effectiveness of Targeting or Industry-Specific Intervention

Markusen seems to accept the notion that government targeting of particular industries is appropriate and effective. Given the fallacy of distinguishing types of industries, I believe that the whole premise of targeting industries is flawed. Instead, governments should upgrade all industries. Moreover, our research suggests that efforts to upgrade industry are most successful when they start from an established base of firms instead of with attempts to stimulate new businesses in fields where local expertise is lacking.

For our 1994 book on Japan, Hirotaka Takeuchi and I gathered evidence on the role of government targeting in industry competitiveness (the Japanese case is important because arguments for targeting typically cite Japan). We titled the book *The Two Japans* because we verify the simultaneous presence of a highly competitive and a highly uncompetitive Japanese economy. We found similar practices, including targeting organizations into legalized cartels (*keiretsu*) and lifetime employment, in both the competitive and the uncompetitive Japans. Targeting was actually more prevalent in the uncompetitive Japan, while a large proportion of the competitive industries had no government targeting. The inescapable conclusion is that targeting and other commonly accepted reasons for Japan's competitiveness do not discriminate between successful industries and failures.

The Conduct of Regional Policy

Markusen (1996), in finding that regional policy has been largely ineffective, tacitly accepts a traditional formulation of regional policy that includes broad incentives for firms to locate in less-developed regions. In my view, this conception of regional policy is flawed and doomed to failure. Regional policy should promote specialization, upgrading, and trade among regions. Cluster formation can be encouraged by locating specialized infrastructure and institutions in areas where factor endowments, past industrial activity, or even historical accidents have resulted in concentrations of economic activity.

Many governments, in the name of regional policy, impede cluster formation and development. They induce firms to locate in areas where they lack supporting infrastructure and face competitive disadvantages. Not surprisingly, these efforts exact a high cost in terms of subsidies.

Economic Policy Decentralization

It is easy to take away from Markusen's article the message that regional policy efforts should cease, but in my view there are powerful arguments for greater decentralization of economic policy to subnational regions. The relevant economic area is smaller than most large and medium-size countries. Pushing many economic policy choices down to the regional level aligns policy with competitive reality. Levers for enhancing the competitive environment—specialized training and infrastructure, information services regulation that promotes innovation, and support for research centers—are often best pulled at the state or regional level based on the local cluster mix. Decentralization of policy choices also fosters accountability to citizens and creates competition among governments. Effectiveness and efficiency can thus improve relative to a monopolistic national government.

The view that "smokestack chasing" by state governments is destructive competition is based on an inappropriate conception of regional or state policy. When states use tax incentives and subsidies to bid against each other for every new plant, the competition is indeed zero-sum. But by investing in specialized training, building cluster-specific infrastructure, and improving the business climate with streamlined regulations, states can attract investment and upgrade the national economy.[1]

Contemporary literature increasingly favors supranational institutions and markets as the relevant unit of economic analysis. Developments in competition necessitate international policy coordination in such areas as trade, financial markets, and the environment. Such coordination is often easier to achieve in regional trade blocs, such as Europe or Latin America. Nonetheless, national and local differences still matter for competitive advantage—perhaps even more. In smaller nations, the relevant economic area and national borders may coincide. In larger nations, relevant economic areas are often smaller than the nation and larger than states, yet national governments are needed to manage macroeconomic policy, provide information, and make rules. Roles and responsibilities at various levels of government must be re-sorted but not necessarily eliminated.

[1] Smaller countries, such as Austria, Chile, Denmark, Hong Kong, and Singapore, and large countries where much policy is made at the state level, such as Germany and the United States, seem to share economic advantages over other large countries. An interesting research question would be to find out why.

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