

## **Porter's Cluster Strategy Versus Industrial Targeting**

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### **Abstract**

Michael Porter has become the early 21<sup>st</sup> century's most prominent champion of economic development, arguing that clusters should be central to any competitiveness agenda. At the regional and local level in the United States, Porter's influence is phenomenal. Essentially, the cluster theory is designed to provide a policy basis for competitive microeconomic (firm-level) development. Porter contends that micro-foundations for development have been largely ignored and that the previous development theory accepted the economy is "factor- and investment-driven." In the past, policy makers have used targeted incentives to support traded (export-oriented) industries. Yet according to Porter, fostering an *innovative-driven* economy should be the focus of development policy, where continual innovation drives productivity, which is the significant most determinant of living standards.

The problem is with the policy implications. Porter argues that it is not *what* a country or region produces, but *how productively* that leads to growth and competitiveness. In theory, it is not the industry mix that is crucial, for firms in any industry can develop competitive clusters if they upgrade productivity. Porter stresses that "there are no low-tech industries, only low-tech firms." If so, it would appear that there is no need for industrial targeting - although it is often the reason many states and localities turn to the cluster framework. This paper critically reviews Porter's theory as a new development paradigm, contrasting the conceptual framework and its policy prescriptions with traditional practice.

## **Introduction**

In December 2003 Harvard Business School Professor Michael Porter electrified an audience of 400 business and government leaders in South Carolina as he unveiled a new economic development strategy for the state. In a related report, Porter (in conjunction with the Monitor Group) asserted that “South Carolina has pursued a low-cost economic strategy, emphasizing its abundant and flexible workforce, good physical infrastructure, and responsive government in order to attract manufacturing operations” (South Carolina Council on Competitiveness, 2005). Porter’s central thesis was that the old model was wrong. In turn, he challenged South Carolina to reshape its approach to economic development, placing higher productivity, innovation, and cluster development at the crux. Passionately and persuasively he championed a new approach. A new private-sector group, the Council on Competitiveness, was launched to activate and oversee the strategy.

Porter’s talk resonated in a state facing sluggish job growth and one of the highest unemployment rates in the country. Like many regions, foreign imports have steadily eroded South Carolina’s traditional industrial base. Bedrock industries like textiles and apparel have declined continually since the mid-1970s; over 100,000 jobs in a key sector were permanently eliminated (out of a workforce of 1.6 million). Subsequently, government-led industrial incentives had some success in the early 1990s, notably with the attraction of a major BMW plant and related suppliers, responsible directly and indirectly for over 17,000 jobs (Schunk and Woodward, 2004). Suppliers sprung up around the BMW plant, helping to revitalize parts of the former textile region. Yet in the

early 2000s the state had not progressed in relative terms, with the state's per capita income hovering at 82 percent of the U.S. average.

Following his address, Porter was hailed as nothing less than a savior, a hero - the "guru" of economic development. A similar story could be repeated for regions and countries across the world. Indisputably, Professor Porter has become the early 21<sup>st</sup> century's most prominent champion of economic development. His message resonates across all areas feeling the effects of globalization and industrial restructuring: "the old model is wrong." In turn, Porter's strategy has spread rapidly. It has served as the basis for economic development policy in countries as dissimilar as Japan, Finland, Estonia, Portugal, Singapore, Costa Rica, Nicaragua, Mexico, and Rwanda. At the state and local level in the United States, Porter's influence runs wide and deep; it is the basis for ubiquitous policy initiatives and councils designed to spur cluster development.

In many respects, Porter is a pioneer. He is more than a business school professor; he is also a leading advisor to private corporations, who then re-invented himself as a scholar concerned about economic competitiveness at all levels. His Harvard Business School course, the Microeconomics of Competition, is one of the most popular on campus. In the course, based on case studies conducted around the world, he stresses that the cluster approach represents the organizing principle for thinking about the drivers of economic progress and organizing economic development efforts. "Everything matters," is one of the many aphorisms that he repeats in lectures.

This paper in part draws on the author's personal experience with teaching the Porter approach, based on training and content from Harvard University's Institute for Strategy and Competitiveness. It is also based on studies of regional economic

development. For the most part, South Carolina's traditional, government-led strategy was based on incentive packages, industrial targeting, and investment promotion missions.

This paper critically reviews the cluster development strategy, contrasting the Porter conceptual framework and policy prescriptions with traditional industrial targeting. There is considerable confusion about Porter's policy prescriptions, among regional development analysts and practitioners. Most tend to view clusters and industrial targeting as identical. Since Porter claims nothing less than to change the fundamental direction of policy, there a strong need for clarification. I will argue that Porter's thinking is muddled on industrial targeting. Where he sees his policy as an alternative, it is actually compatible with, if not a complement to industrial targeting. The next section reviews the cluster theory and discusses how Porter has posed his approach. The third section contrasts clusters and industrial targeting.

### **Porter-Style Clusters: Theory and Practice**

Over the last fifteen years, Porter (1990; 1996; 1998) has argued that clusters should be central to any competitiveness agenda, including developing and developed countries. In practice, many advanced countries in the Organization for Economic Cooperation and Development have conducted cluster studies (Roelandt and den Hertog 1999). European regions have embraced the cluster concept "with enthusiasm" (Bergman and Feser 1999), as have numerous U.S. states. Before South Carolina, Connecticut served as the best example of a state embracing the Porter approach. Governor Rowland of Connecticut became a leading advocate during and after he left office (up to the time

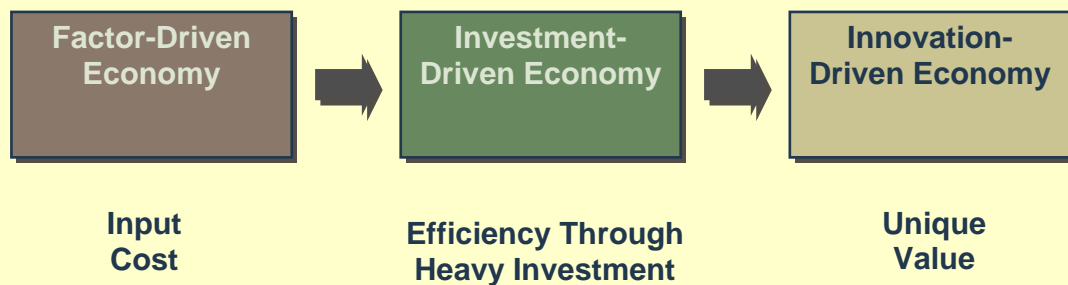
of his imprisonment for graft in 2005). Developing countries have also adopted Porter's cluster model to re-shape regional and national development policy. USAID has embraced the policy in African countries (see The Mitchell Group 2003). An often-cited case of commitment to clusters came in Costa Rica under President Figueres in the 1990s.

Porter (1990) argues that the received development theory sees the economy as "factor-driven." Traditionally, a country's comparative advantage in international trade has been determined by such factor endowments as land, natural resources, labor, and the size of the local population. Under comparative advantage (Heckscher-Ohlin) theory, the basis for export development is factor intensity: the country should export products that use its abundant factors intensively. No doubt South Carolina possesses an abundance of labor available for low-skill industries, but they share this advantage with other regions and most developing countries.

One of Porter's aphorisms is that "national prosperity is created, not inherited," which contrasts with comparative advantage theory in which resource endowments underlie regional and country competitiveness. Clearly, there are factor-driven economies based on abundant labor, suitable land, and so forth. Yet factor-driven economies, Porter (1990) asserts, represent a preliminary stage of development. As shown in Figure 1, the next stage is investment-driven economies; that is, raising the productivity of factors through more investment. This stage characterizes many regions and countries, including South Carolina since the 1930s, when domestic and foreign investment increased the capital stock dramatically. The period of heavy investment from the late 1940s through the 1990s also led to a dramatic closing of the per capita income gap with the rest of the

United States - rising from about 40 percent of the U.S. average to 82 percent. Since the early 1980s, however, the state's relative per capita income stagnated. The Porter/Monitor report on South Carolina (Council on Competitiveness, 2005) suggests the state sold itself as a low-cost (low-wage, low tax, cheap land) economy. The purpose of Porter's report was to evaluate how the state could move beyond the factor- and investment-driven stage and show the way to higher per capita income. It is correct to say that South Carolina's traditional strategy was based on incentive packages, industrial targeting, and investment promotion missions. Yet it has had some notable success. In fact, a leading Harvard Business school colleague Porter had promoted Greenville-Spartanburg as an example of successful economic restructuring following the location of BMW in 1992 (see Kanter, 1997).

**Figure 1: Porter's Stages of Competitive Development**



Source: Porter (1990).

According to Porter, attracting BMW with incentive packages (\$120 million in this case) moves the region from a factor-driven (low cost) strategy to an investment driven approach. But it is cultivating innovative-driven economy as the ultimate economic development goal (see Figure 1). In this case, innovative economies not only are highly efficient, but also create unique value products and services. They thrive through invention and innovation that lead to constant upgrading of the industrial base; that is, more efficiently using factors and investment, along with creating high-value added products.

To most observers of regional development, the model that comes to mind is the Silicon Valley in California. Yet, surprisingly, in lectures and case discussion, Porter uses California's wine clusters around Napa Valley and the Central Coast as his primary examples of innovative region. He argues that the unique-value wine regions of California are not the result of natural endowments - the so-called *terroir* (soil conditions, climate etc.) as we would expect for successful vineyards to flourish. After all, wine is the classic example of Ricardian comparative advantage. Instead, Porter contends that the success of the California wine region is based on its ability to constantly innovate, raise productivity, and create unique, high-valued added export-oriented products.

Thus, the central hypotheses put forth in Porter's writings and lectures are that regional competitiveness is propelled by firm competitiveness and that firm competitiveness in turn requires an innovative milieu to thrive. While Porter's emphasis on the importance of cultivating innovative capacity would come as no surprise for regional analysts and policy makers, it is the additional hypothesis that ultimately reshapes policy thinking. Porter maintains that the best way to raise productivity and

innovative capacity is through local clusters. Regional and urban scholars have long emphasized that clusters represent a “pervasive aspect of modern economies” (Bergman and Feser, 1999, p. 1). The precursors of the Porter cluster concept date back to the very origins of regional analysis, with antecedents like agglomeration (localization and urbanization economies), growth centers, industrial complexes, and industrial districts.

Porter (1998), however, says that his approach to policy is different; he wants nothing less than to re-orient policy to focus on microeconomic (firm-level) development. The country and regional competitiveness theory follows from his earlier work on firm competitiveness and strategic advantage (Porter, 1998, Chapter 1). Arguing that macroeconomic stability is necessary, but not sufficient, Porter contends that micro-foundations for development have been largely ignored. He has developed an international ranking of countries based on the drivers of micro-level competitiveness for the World Economic Forum, although a similar measure has not been developed for regions.

The central tenets emerged inductively through case study research, rather than derived from formal, deductive logic so typical of economics. What Porter found in case after case is that when clusters take hold, they continually enhance *firm* competitiveness, allowing the regional economic base to survive in the face of globalization and technical change. These groups of firms may extend beyond a single industry, yet they are held together in varying degrees of mutual interest and geographic proximity. Echoing standard urban and regional theory, Porter emphasizes that competitive clusters develop through positive externalities (in part because of agglomeration advantages) that lead to cost savings. Clusters also serve to upgrade managerial and labor force skills and advance

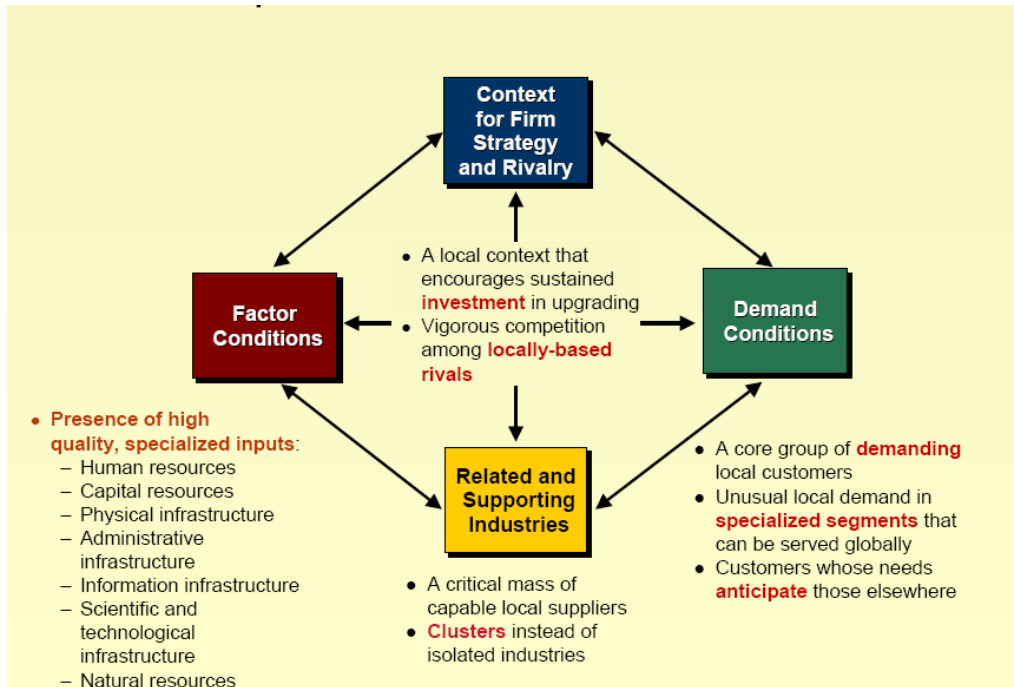
marketing/customer relations. Potentially, clusters will enhance local competition, productivity, new business formation, and innovation - leading to a virtuous cycle of development. In turn, successful clusters more deeply root firms in the local economy and are less likely to require incentives to locate.

The cluster theory has thus become his central organizing principle for economic development. Bergman and Feser's (1999) comprehensive review of the subject, which covers clusters and related regional development concepts like agglomeration economies and growth poles, strongly endorses the framework:

“Porter's readable account of the sources of national competitive advantage, which includes a key role for geographic proximity, is largely consistent with a growing body of literature on how interdependencies between firms, industries, and public and quasi-public institutions affects innovation and growth in regional agglomerations ... Nearly every analysis of industry clusters begins with - or at least makes some mention of - Porter's 'diamond,' a characterization of his four key drivers of competitiveness.” (Bergman and Feser, 1999, p. 7).

In the Porter diamond model mentioned above, clusters advance through four dimensions (1) strong and sophisticated local demand; (2) a local base of related and supporting industries exist in the local economy to support the export industry; (3) favorable factor (resource) conditions; (4) a competitive climate driving firm productivity. The diamond model is depicted Figure 2.

**Figure 2: The Porter Diamond Framework**

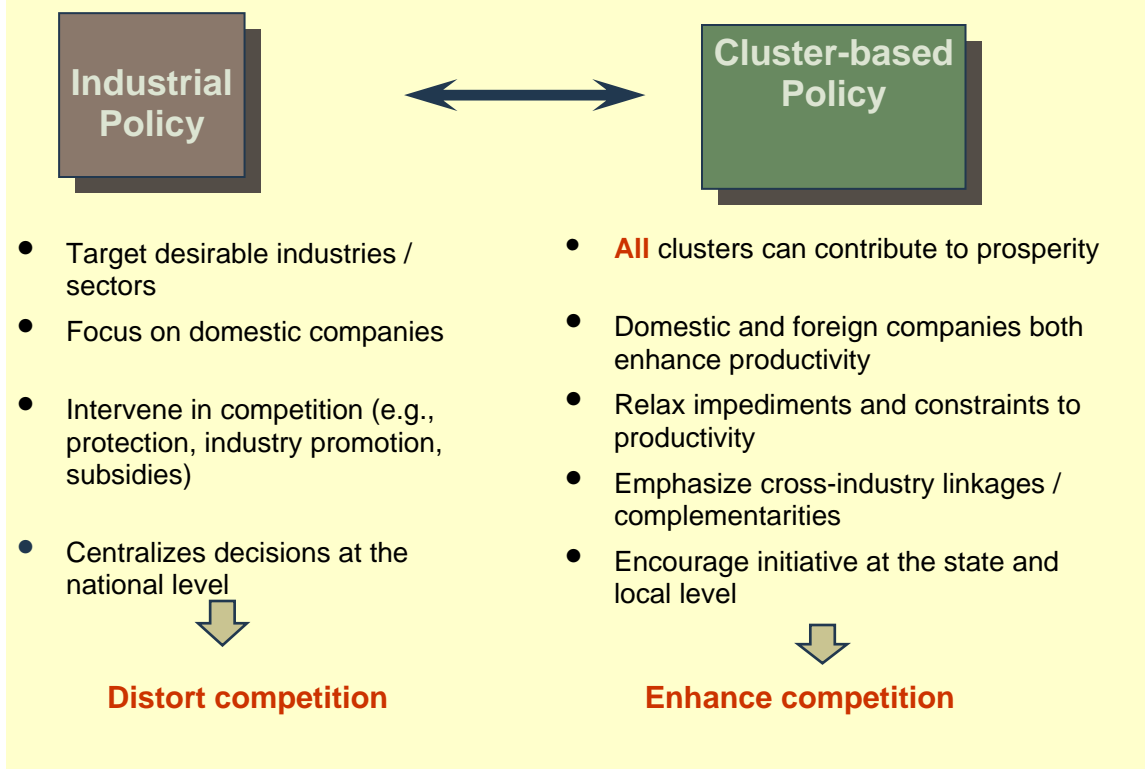


Source: Michael Porter, Institute for Strategy and Competitiveness, Harvard Business School. See Porter (1998).

### Clusters Versus Industrial Targeting

As can be gleaned from the discussion so far, Porter argues that it is not *what* a country or region produces, but *how productively* that leads to growth and competitiveness. In theory, any area or country can develop competitive clusters if it focuses on upgrading productivity. A prominent Porter aphorism is that “all clusters matter,” which may come as a particular surprise to regional policy makers looking for industrial winners. Further driving home this point, Porter asserts in lectures that “there are no low-tech industries, only low-tech firms.” In other words, it would appear that there is *no need for industrial targeting*.

**Figure 3: Porter's View of Cluster Policy versus Industrial Policy**



A summary of cluster-based economic development vis-à-vis traditional industrial policy is given in Figure 3, which is taken directly from Porter's typical presentation in lectures and writings. The key points of contrast are the first bullet point: Whereas industrial policy targets "desirable industries and sectors," the cluster approach maintains that "all clusters can contribute to prosperity."

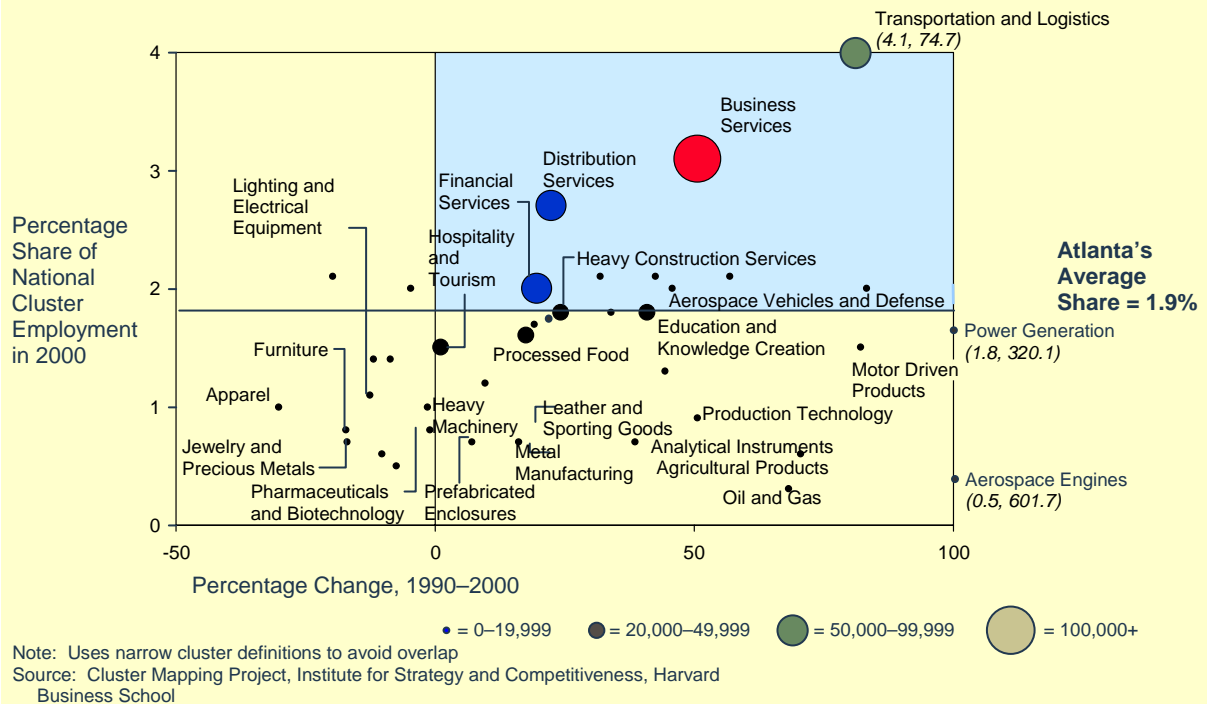
The problem is that policy analysts want to know which clusters matter, target high-tech industries, and generally believe what a region produces (not just how) is critical to strategic development policy. Most policy makers in South Carolina, for example, believed that the Porter analysis was designed to identify clusters to target for development. "All clusters matter" does not appear to be a strategy.

To be sure, Porter does believe that “traded” (export-oriented, or economic base) clusters are more important than “non-traded” clusters. In this respect, Porter’s cluster theory is an elaboration of regional economic theory that has long informed local economic policy decisions, in which “traded clusters” serve as primary drivers of economic growth and extend through backward and forward linkages. In regional science, identification of clusters has depended on input-output analysis, although this approach is oriented more toward tracing backward and forward linkages among industrial complexes (Czamanski and Ablas, 1979. Czamanski, 1971). Porter eschews input-output analysis. When he speaks of the connections among firms, he is not referring to backward and forward input-output linkages, but technology, skills, information, marketing and customer needs, which he views as critical components of competitive success and innovation. Yet he recognizes that the traded sector plays a crucial role in fostering development by underlying all incremental growth and new business activity. Thus, in line with most regional theory, Porter argues that an export-base (sales outside the region or country) is a sign of competitive advantage. Mimicking the common practice, he identifies traded (export-oriented) industries and clusters using location quotients. To identify traded clusters, Porter’s Harvard University Institute on Strategy and Competitiveness has a major cluster-mapping initiative (see <http://data.isc.hbs.edu/isc/index.jsp>)

The cluster mapping project, which covers most regions of the United States, is not meant to pinpoint the clusters that can develop in particular areas; it only suggests where existing strengths may lie. Yet like industrial targeting, it seems to represent an attempt to think strategically about development. This is where policy makers may

become confused. Indeed Porter's report to South Carolina *did identify* four clusters: automotive, forestry, chemicals, and tourism. These are identified through a standard location quotient approach familiar to regional analysts, and used in Porter's cluster mapping. An example of cluster mapping for Atlanta, taken from the Cluster Mapping Project of Harvard University, is shown in Figure 4. On the vertical axis, industries (clusters) that have shares of national employment greater than Atlanta's average share (1.9 percent) are depicted as strong clusters. Growth in the share of employment is shown on the horizontal axis. Thus, strong industries (clusters) are given in Figure 4's upper right quadrant. Similar diagrams, variants of employment location quotients, were used to show South Carolina's competitive strengths.

**Figure 4: Measuring the Specialization of Regional Economies (Atlanta Metro Area)**



## **Conclusion**

In the final analysis, the same empirical tools used in industrial targeting are employed in Porter's cluster analysis. Employment location quotients serve as a guide to policy, as the Cluster Mapping Project reveals.

Policy makers may believe that Porter's approach entails targeting industries and then building clusters. Nevertheless, Porter sharply differentiates cluster initiatives from industrial targeting. The following points summarize Porter's policy prescriptions:

- Support the development of all clusters, not choose among them;
- Strengthen established and promising clusters rather than attempt to generate entirely new ones;
- Top-down government strategies should not guide development. Cluster initiatives are advanced by the private sector, with government as facilitator.

To date, there are no known cases where regions or countries have explicitly followed these principles in lieu of industrial targeting. That should be the subject of serious case studies.

The point of this paper is simply to argue that Porter's prescriptions depart sharply from the traditional policy of industrial targeting.

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