

INTRODUCTION

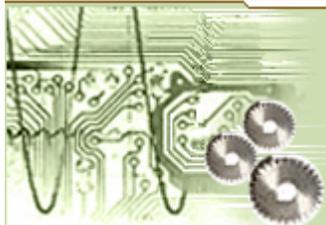
What's Driving the South's High-Tech Engine?

The Home of World-Class High-Tech Clusters

The South as a High-Tech Trade Hub

An In-Depth Look at the Southern States

WEB DIRECTORY



What's Driving the South's High-Tech Engine?

Lower costs, an available work force, educational alliances with industry, as well as significant foreign direct investment have made the South a major player in the high-tech arena.

By Ed McCallum

THERE IS LITTLE DOUBT THE SUNBELT REGION of the United States has experienced significant growth in recent years. The region has benefited from targeting newer, faster-growing manufacturing industries than those clustered in the North, and to some extent has been considered the preferred location for entrepreneurial manufacturing startups.¹

Policymakers and economic development professionals need to understand the factors that influence decision-makers to bring capital investment and jobs to their respective states and communities. The ability to influence location decisions that result in the creation of high-paying jobs that improve the quality of life and welfare of their citizens drives this search. In particular, the recruitment of high-technology industry is of keen interest and is felt to be one of the best ways to accomplish this task. An understanding of the causative factors that provided an impetus for the emergence of these industries in the South could provide insight.

A simplistic explanation for this phenomenon would be to attribute the growth to the development of air conditioning and interstate highways. This is true from a historical perspective when examining the industrialization of the South; however, it provides little explanation for the continued investment of capital in high-technology sectors during the post industrialization period.

As John Hood stated, "The downside of air conditioning in the South is lengthier and more dangerous legislative sessions, lasting throughout the summer."² In spite of this apparent negative externality of "cool air" and the resultant "hot air" of the legislative process, the fact is that public-policy decisions in response to changing global economic conditions did much to advance the development of high technology in the South.

Foreign Direct Investment

World markets have forced foreign direct investment into the United States, as in many other parts of the world. But why was the South the focus of much of this investment? One might look at the product life cycle theory that states, "As process technology becomes more standardized and nonproprietary, dominant designs appear."³ Markets become more global and companies compete on the basis of price. As a result, new products are commonly launched in developed nations.

As average costs decline, products are first exported to affluent nations and then newly industrialized countries. Production follows markets as the innovators create foreign facilities in order to restrain the entry of competitors from other low-cost regions. Outsourcing components to less developed nations is a strategy that avoids the risk of sizable investments in any one market. Investments by European and Japanese companies in the automotive industry support the anchor theory⁴ where agglomerations of supplier industries occurred. The dispersion of expertise within these anchor industries helped establish some of the clusters in the South that have emerged within the last 20 years.

The impetus can be attributed to business-friendly policies in the South that consist of lower tax burdens, less restrictive business regulations, and a focus on work force development and training.

Such characteristics explain why foreign-owned automakers have consistently decided to concentrate new investment in the South; but they do not explain the continuance of other high-tech industries. Classic economic theory suggests that companies entering the U.S. market were at a significant disadvantage when competing with U.S. companies for a variety of reasons — not the least of which included barriers to entry (capital), market rivalry (market knowledge), and supplier power (supplier base).⁵ Product quality and market acceptance for both Japanese and European products started out poorly, but improved steadily over time. As a result, foreign-owned companies learned that to be successful in the U.S. market they would have to achieve lower costs and more efficient production processes, but still enjoy the same freedoms offered within that market and capitalize upon them. The South offered this opportunity.

One needs only to look at the education system to understand local policy response to industrial recruitment. It is no secret that the South has had a woeful showing in educational achievement by almost any measurable standard; however, the fastest-growing language enrollment in postsecondary institutions is in the South.⁶

Work Force Training

In addition, the work force training programs in the South are considered some of the best in the world, designed to respond to individual industry needs as opposed to very general industrial curriculums. While this may seem to be a small factor that influences high-technology growth, it is but one indication of state policies that overall have the greatest impact in influencing footloose industries.⁷

Overhauling the entire education system was a Herculean task that was both impractical and beyond the resources of each individual southern state. While not an optimal or particularly equitable solution for improving overall education, creating quality work force training programs was a practical means of promoting job growth and creating revenue streams that could eventually correct an ailing system. Furthermore, research has demonstrated that the factors that attract capital-intensive industries are, in many respects, the same factors that have an impact on the footloose industries.

Several examples demonstrate this to be true. The Research Triangle Park (RTP) in North Carolina is one example. Although the park was the direct result of the efforts of an individual (Karl Robbins in 1958) soliciting private funds from across the state, the park took root in 1959 when then Governor Luther Hodges announced the establishment of the Research Triangle Institute, the construction of the Robert M. Hanes Building (to house the Foundation and the Institute), and the acquisition of land assembled by Karl Robbins.

A more recent example is the decision by the Scripps Research Institute, the world's largest nonprofit research institute, to locate in Florida. As the leading biotechnology research institute, Scripps receives more funding from the National Institutes of Health than any other independent research facility in the nation. This project was successfully recruited to Florida by a concerted effort of state policymakers, in spite of the fact that classical location theory suggested it should go to the RTP, the northern Virginia-Maryland biotech

corridor, Massachusetts, or southern California.

Furthermore, in the last decade, three aerospace companies have decided to locate operations in the South. Boeing's Delta IV rocket facility in Decatur, Ala.; Gulfstream's aircraft manufacturing facility in Savannah, Ga.; and Vought/Alenia's integrated fuselage structure manufacturing facility in Charleston, S.C. were all the result of the respective state's policies toward industrial recruitment — not the result of inherent clusters or regional expertise.

Lower Costs and Other Advantages

The South's emergence in high technology was also the result of industries choosing to locate to areas where few or none previously existed. These industries invested in the latest technology and most advanced systems available. The primary advantage of locating in the South was economic — there were cheaper recurring operating costs that outweighed the upfront capital costs. The resulting savings justified investment in brand new facilities unencumbered by outdated structures or processes that kowtowed to existing labor agreements. As a result, the most effective and efficient technology was installed, providing not only a competitive edge from a cost per unit standpoint, but also bringing with it the maintenance and service infrastructure required to keep these systems running. In this regard, the anchor theory of location proves itself to be true, yet it does not explain the continued investment in the South.

Evidence suggests that the nonintrusive nature of many southern states into the affairs of industry is also a powerful determinant.⁸ It is the opinion of this author that the policies and regulations of government that work the best are the ones that are the least restrictive — barring those associated with degradation of the environment, worker safety, or revenue streams for public services.

Of course, to be fair, the South has not been confronted historically with the problems of urban decay, congestion, and the industrialization that has forced the hand of public policymakers to intervene on behalf of the citizenry.⁹ Be that as it may, the reality is that these states' policies precedents were pretty much clean slates and open to be designed according to the needs of industry — which is a very important competitive advantage. Furthermore, industrial growth allowed the South to finance public infrastructure and services based on future revenues of a growing tax base as opposed to a declining one. It remains to be seen what the long-term effects of this policy will be; however, the present circumstances speak for themselves.

Quality of Life

While seemingly trivial, the climate and quality of life this region offers play important roles as well. Granted, quality of life is a subjective phenomenon open to individual interpretation; however, you can get more for less in the South — which can be a powerful draw for executives and upper-level management. The success of industries that have already located in the South has not only increased public investment, but also increased private investment in amenities for housing and recreation. In the past, the warm climate could only be enjoyed in a few resort communities reserved for the wealthy; however, this has changed considerably. Developers have invested capital to exploit the natural resources to the benefit of the increasing populace. Recruiting talent into many regions of the South, where housing costs are one third the cost of those in the Northeast or West Coast, is effectively providing the population with a huge raise in salary.

Technology development in the South has been driven by a combination of the global economic forces of foreign direct investment as well as public policy doctrines that strive to provide lower taxes and less regulation. Lower overall costs in wages, utilities, and taxes were (and continue to be) an important location factor.

Right-to-work laws have also played an important role in allowing operating flexibility and promoting streamlined operations — providing a competitive advantage within the U.S. market against older established companies. In addition, promoting and supporting educational institutions' cooperation with industry via the university and community college systems has been an important factor. There was, and continues to be, a trainable and available work force with shortages apparent in only a few major metropolitan areas.

Taken together, these forces have accelerated the progressive tenets of cluster analysis by taking advantage of the principles of anchor industries. The South basically skipped a whole step in the natural progression of economies, where inter- and intrastate competition prevailed, and jumped into the global scale as a result of foreign direct investment.

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1 Scott Schuh and Robert K Triest, "The Evolution of Regional Manufacturing Employment: Gross Job Flows Within and Between Firms and Industries," *New England Economic Review*, Third Quarter 2002.

2 John Hood, "Southern Lights — Economic Growth in Southern States," *National Review*, June 3, 1996.

3 R. Vernon, "International Investment and International Trade in the Product Life Cycle," *Quarterly Journal of Economics*, 1966.

4 Another theory suggests that anchor firms that attract human capital and specialized suppliers, providing knowledge and spillovers, represent a key ingredient.

5 Michael E. Porter, *Competitive Strategy, Techniques for Analyzing Industries and Competitors*, 1980.

6 Source: Association of Departments of Foreign Languages, 2003.

7 Darrene Hackler, George Mason University, "High Tech Industrial Location and Economic Development," *Midwest Political Science Association*, April 16, 2001.

8 *Ibid*, Hackler.

9 This is a generalization of the entire South and not intended to address specific communities or regions that have experienced this as has been evident in the textile or furniture industries.

