STRATEGIC OPTIONS FOR FOSTERING DEVELOPMENT OF THE AUTOMOTIVE CLUSTER IN TENNESSEE

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The Center for Business and Economic Research (CBER) has completed three reports focused on the automobile cluster and its development in Tennessee and the Southeastern states. The goal of these studies was to provide policymakers with insights on the causes and consequences of this important aspect of the region's economic development.

While the three studies shared a common general focus, they each took on a unique perspective. The first report, *Examining Supply Gaps and Surpluses in the Automotive Cluster in Tennessee*, defined the notion of an industry cluster and applied this concept to the region's automotive sector. Supplier linkages were identified and regional shortfalls and surpluses were identified for specific industries. The purpose was to improve the targeting of Tennessee's scarce industrial recruitment resources. The second study, *The Location Decision of Automotive Suppliers in Tennessee and the Southeast*, examined the factors that influence the attraction and retention of automotive suppliers. This report relied on existing research, as well as a newly-administered survey of Tennessee suppliers, to identify the locational advantages and disadvantages of the state economy. The third report, *A Profile of the Automobile Sector in the U.S. and Southeastern States*, documented the regional shift in automotive production to the Southeast, which began in earnest in the early 1980s. This report provides information and statistics on the industry's presence in the U.S., with emphasis on Tennessee and surrounding states. Some of the statistics are quite striking. For example, Tennessee ranked fourth in car production (in 1998) and the

Southeastern states accounted for over 56 percent of the nation's heavy truck production.

Together the three reports provide important background information for state and local policymakers interested in promoting the short-term growth of the automotive sector as well as its long-term sustainability. CBER has reviewed the three reports in order to provide an integrated set of recommendations on a strategic development plan for the automotive cluster. These recommendations follow.

Industry Cluster Working Group

The automotive cluster is a set of suppliers linked through the sale and purchase of intermediate products and the final assembly of automobiles. The Tennessee economy does not have an independent stand-alone automotive cluster, as extensive inter-firm linkages exist that span state (and in some instance national) boundaries. In short, the automotive cluster is more than Tennessee assembly firms and automotive suppliers. The automotive cluster, like many industry clusters, is dynamic; the relationships between firms are constantly changing, the needs of the industry (such as job training and infrastructure) are in constant flux and the product itself continues to evolve in response to changes in consumer tastes and the development of new technologies. Because of the importance of the automotive cluster to the state economy and its tax base, it is recommended that an *Industry Working Group* be established to ensure that policymakers can monitor industry trends and respond as quickly as possible to the industry's needs through the refinement and development of appropriate public policy. At a minimum this working group should include representatives from regional assemblers of transportation equipment (not simply automobile assemblers), tier 1 and tier 2 suppliers, state education policymakers and the State Department of Economic and Community Development. Representation from local government and supporting industry (such as utilities) also should be considered. The group should meet quarterly to discuss industry trends and needs, and the status of relevant state and local policy initiatives that will influence the competitiveness of the cluster and the regional economy.

Short-Term Industry Development Versus Long-Term Sustainability

Policymakers, working in cooperation with the Industry Working Group, should develop a dual strategy to foster the short-term development of the automotive cluster and ensure its long-term sustainability in the region. The industry's migration to the region has taken place for many reasons, including relatively low labor costs and taxes, and an excellent location which places production near the final consumer. Should these and other regional advantages diminish or disappear, the industry can be expected to migrate to other low cost regions, including off-shore sites. Global automotive production has been in the mature phase of the *product cycle* for over two decades. Automobile design is well established and largely standardized, and mass production techniques have been implemented efficiently. The car of today and its production is in many ways not so different than the mass produced car of Henry Ford's era. As major aspects of product innovation slow and markets become saturated,

new initiatives are required to ensure profitability, and new markets need to be cultivated. New management and marketing techniques now dominate engineering and design, as cost saving measures, profits and increased market share are pursued. (A good example of innovative management techniques is the *just-in-time* inventory system.) The short-term needs of the industry in terms of cost savings must be distinguished from the long-term needs of the industry in terms of new products and designs. A long-term strategy should emphasize research and development, including replacements for the internal combustion engine and *green* components, in anticipation of new product breakthroughs in coming years. Linkages to the state's system of higher education, exploiting expertise in the sciences, engineering and business management, may prove invaluable. An important long-term question is whether the region's current assemblers and suppliers will be in a position to benefit from future product and market innovations.

Re-evaluate and Update the Scope of the Automotive Cluster

The automotive cluster should be re-evaluated, redefined and updated on a 3-5 year cycle due to the changing pattern of supplier linkages and the potential for new product development. The effectiveness of public policy will hinge in part on the whether the industry is defined properly and its needs are assessed accurately. A comprehensive database of suppliers supporting the Southeast region's transportation equipment cluster needs to be developed to support this initiative. This database can build on the information currently maintained by the Research Division of the State Department of Economic and Community Development, complemented with other sources including Elm International, Inc. and the *Directory of Tennessee Manufacturers*. Since these sources will remain inadequate, especially in terms of out of state suppliers, efforts should be made to supplement the data through other avenues. One approach would be to cultivate contacts with other states within the region to share relevant data and information; all states in the region stand to gain from such an initiative. Other data sources need to be identified as well. The comprehensive database can serve as an important gauge of industry activity and provide the basis for communication between policymakers and the industry.

Link the Automotive Cluster to the Region's Broader Transportation Equipment Sector

While the automotive cluster is of great importance to the regional economy, there are important elements of the broader transportation equipment sector that provide significant economic and fiscal benefits. The transportation equipment sector includes automobile parts and assembly, aircraft and parts, ships and boats, railroad equipment, motorcycles and bicycles, and guided missiles and space vehicles. There is an important heavy truck assembly presence in the region, and middle Tennessee has a well-established aerospace sector. The latter, in particular, may offer the technology base to improve the performance of the entire transportation equipment sector, especially over the long term. The common nature of the product

and production technology, and the close-knit group of suppliers, suggests that this broader transportation equipment sector be included in any discussion of strategic economic development.

Target Scarce Recruitment Resources and Partner with Others

The State's limited industrial recruitment resources need to be targeted to filling existing supplier gaps, including those candidate areas identified in *Examining Supply Gaps and Surpluses in the Automotive Cluster in Tennessee*. This is not to suggest that other firms should be ignored nor discouraged from locating in the state. But in light of limited tax incentives and TIIPs funding, as well as staff and budgetary limitations in the Department of Economic and Community Development, the state cannot afford to aggressively recruit and court all firms interested in locating in Tennessee. The state should seek to coordinate its recruitment of automotive firms with other regional and local development organizations in order to minimize costs.

One-Stop Shopping Support for the Cluster

Industry services provided by state and local government need to be well coordinated and provided in the most efficient and cost-effective fashion. Policymakers must ensure that firms remain on the cutting edge or they will lose market share to competitors in other regions. A *one-stop shopping* support network should be developed to facilitate access to services provided by state and local government. A single contact person or office needs to be able to direct inquiries from the industry on technology development and transfer, access to financial capital, training assistance, and so on, to the proper parties within the state. This can be a very modest initiative, requiring someone with expertise in the automotive industry and state/local economic development policy.

Monitor Key Industry Trends

The state needs to monitor trends taking place in the automotive sector of the global economy, with an eye towards new product developments, and new management, marketing and production techniques. This activity could be coordinated with the one-stop shopping service support network. This will prove invaluable to the design and delivery of appropriate public services targeted to the industry. New production techniques, for example, may render obsolete some of the state's automotive sector production capacity; such trends need to be identified as early as possible to allow regional manufacturers to respond and compete, as well as ensure that state policy remains on the cutting edge. An important trend now taking place in the industry is the shift towards manufacture of modular components. (In some sense this is not a new phenomenon. For example, both engines and wiring harnesses have long been produced as integrated products, often being supplied by single entities.) Production of modular components will accelerate in the years to come, placing pressure on existing suppliers and altering the structure of the automotive cluster. This will in turn change the nature of product assembly, reducing the in-plant time to completion.

Human Capital Development to Support Industry/Regional Competitiveness

While the state has extensive locational advantages vis a vis other states in the region, a recently administered survey confirms concerns regarding the inadequacy of human capital investments in the state's workforce. These concerns are not confined to Tennessee, but to the nation as a whole and to its global competitiveness. For example, The National Association of Manufacturers, in its 1999 *Annual Labor Day Report*, emphasizes the importance of technical training and training partnerships to the nation's future economic viability; training is the first of four pillars of the organizations' growth strategy for the 21st century. Education and training yield important benefits for individuals, firms and state/local government. Unfortunately, targeted educational assistance to the private sector is often perceived as an economic development incentive. The reality is that it is the responsibility of government, working in concert with individuals and the private sector, to provide the education and training that can promote the highest possible standard of living and quality of life. Unlike traditional economic development incentives, for which benefits disappear when a company subsequently leaves the state, investments in human capital can remain in place, supporting other industries and occupations. Simply put, investments in human capital represent an important investment in the state's future. The state's training resources and programs need to be inventoried and assessed to guarantee they are providing the skills needed by the industry. This should be done in cooperation with the industry working group discussed above. The financing of educational assistance should recognize that all parties stand to reap the fruit of human capital investments.

Transportation Infrastructure and Access to Markets

One of Tennessee's most important locational advantages is access to markets, a reflection of the state's fortunate geographic position in the U.S. Transportation costs are a major cost element to supplies and assemblers, and will heavily influence the location of automotive sector activity. The state's transportation infrastructure, in its entirety, needs to be assessed to ensure it can accommodate and support the needs of the automotive cluster and other industries. A geographic locational advantage could otherwise be offset by the inadequacy of the transportation infrastructure. Tennessee has visible and effective modes of surface, air and water transportation, which are particularly well developed within urban areas of the state. But the metropolitan areas have experienced tremendous growth, and transportation bottlenecks have in some instance become acute. This is especially true as it relates to construction bottlenecks. Efforts need to be made, in conjunction with the State Department of Transportation and local governments, to develop as quickly as possible new transportation infrastructure, and avoid excessive construction delays. Construction plans should seek to mitigate the costs of construction delays, as these costs are borne by commercial carriers and commuters. As growth continues to spill over into the fringes of the state's metropolitan areas and beyond, transportation infrastructure bottlenecks will become more acute.

The current system of two-lane highways and secondary roads at the sub-state level were simply not designed for the economy of the new millennium.

Quality of Life and Amenities

Quality of life in Tennessee received the most favorable rating of any locational attribute of the state in a recent survey of Tier 1 and Tier 2 suppliers. Natural and man-made amenities are becoming increasingly important to firm and worker location. In the early development of automotive industry, workers migrated to the north and upper midwest to acquire jobs; today production is migrating to regions that can offer managers and workers a high quality of life. In fact, many workers would likely exchange lower earnings for improved amenities and quality of life. This means that proper investments by the state in developing amenities may actually reduce labor costs to industry.

Taxes and Industry Development

The survey of Tier 1 and Tier 2 suppliers revealed that tax burdens were a concern, but not a major concern, of industry. While tax burdens may not be viewed as onerous, efforts must be made to ensure value is provided for the tax dollars contributed to state and local revenue coffers. Firms recognize the importance of education and training, infrastructure and amenities, and these investments can not be supported without a strong tax base and efficient service delivery. Targeted tax incentives to support the automotive cluster should be considered and evaluated, especially in terms of encouraging long-term sustainability. The focus should fall on research and development and engineering activities that may lead to new product breakthroughs, solidifying the industry's presence in the region.