10-6-1995

Economic and Fiscal Impact of a Proposed International Tradeport at the W.K. Kellogg Regional Airport

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ECONOMIC AND FISCAL IMPACT

OF A

PROPOSED INTERNATIONAL TRADEPORT

AT THE W.K. KELLOGG REGIONAL AIRPORT

October 6, 1995

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Executive Summary

Business and community leaders of Calhoun and Kalamazoo Counties are exploring new avenues that may lead to better cooperation between the two counties and, more importantly, to the creation of a critical mass of economic assets that can fuel future economic growth. The most recent, and probably most concrete, proposal has been to create an international tradeport at the W.K. Kellogg Regional Airport in Battle Creek.

A tradeport, as envisioned, is a fully-integrated transportation, distribution, and manufacturing complex in which components, supplies, and products are flown directly to or from a plant within a foreign trade zone environment. In contrast, a traditional air cargo facility is exclusively a distribution center that transfers cargo from trucks, rail, or ship to air cargo planes or the bellies of scheduled passenger planes.

This report assists efforts of regional cooperation and collaboration in three ways. First, it provides an assessment of the area's economic performance and identifies through a local survey its strengths and weaknesses. Second, the report presents an analysis of the economic potential and fiscal impact of developing a tradeport. Third, the report outlines pre-conditions for successful multi-community collaboration and suggests additional opportunities for regional cooperation.

Assessment of the Economic Performance of Calhoun and Kalamazoo Counties

- ***The Kalamazoo-Battle Creek MSA (Calhoun, Kalamazoo, and Van Buren Counties) has outperformed many similar-sized metropolitan areas in the Great Lakes States during the 1980s and early 1990s.***

  - Out of 49 MSAs examined, the Kalamazoo-Battle Creek MSA ranked 12th in total and manufacturing employment growth, 13th in per capita income growth, and 20th in population growth.

  - Unfortunately, Calhoun and Kalamazoo Counties have been hit by a series of announced layoffs, mergers, and plant closures over the past three years. We forecast that the overall impact of these announced employment losses will be the elimination of nearly 8,000 jobs in the two-county area in 2005.

- ***No one set of best practices is being followed by the economic development organizations of those MSAs that have outperformed the Kalamazoo-Battle Creek MSA, although several common themes emerge.***

  - Most organizations focus considerable effort on developing partnerships with existing firms and local governments.

- Many MSAs offer a region-wide, one-stop economic development organization that serves more than one local governmental unit but seldom crosses county lines.

- For MSAs with a major university, local economic development organizations promote its business and research services.

- ***Manufacturers in Calhoun and Kalamazoo Counties rank highway access and higher education opportunities the highest among the two-county area's strengths, while they list indirect labor costs (workers' compensation, health care costs, unemployment insurance) and the shortage of skilled workers as major weaknesses.***

Economic and Fiscal Impact of an International Tradeport

The economic viability of an international tradeport and its success in significantly stimulating regional economic growth depend upon current and future demand for air cargo and customers' satisfaction with the current delivery of air cargo services. Nevertheless, tradeports and air cargo airports, like most public infrastructure assets, facilitate regional growth but do little to stimulate growth. Furthermore, existing tradeports report that they are losing money and need to be subsidized. Air cargo service is customer driven and can enhance the competitive advantage of a region. However, current research and the experience of other tradeports suggest that proximity to air cargo facilities is not an effective incentive for attracting new manufacturing firms to an area.

- ***National and international use of air cargo is forecasted to grow.***

  - Worldwide, air cargo usage is expected to grow at an average rate of 6.5 to 7.6 percent per year during the next 15 years, while the world economy pushes ahead at a 3.3 percent annual rate. The fastest growth is expected to occur on Asian and Latin American routes. These markets could account for 60 percent of the world air freight by 2013.

  - Domestically, air cargo usage is expected to grow between 3.1 and 5.3 percent per year for the next 15 years.

- ***Local manufacturers do not expect their use of air cargo to grow much in the next 10 years.***

  - About two-thirds of local manufacturers do not anticipate their air freight shipments to increase during the next ten years.

  - Twenty percent expect their air shipments to increase no more than ten percent within the next decade.

- ***The structure and size of southwest Michigan's industrial base suggest a moderate demand for air cargo.***

  - We estimate that local manufacturers in the eight-county area of Allegan, Barry, Branch, Calhoun, Cass, Kalamazoo, St. Joseph and Van Buren shipped by air about 7,900 tons of cargo in 1992 from various airports including Chicago and Detroit. This was about one-third the tonnage lifted out of Kent County International Airport in Grand Rapids. Manufacturers in the eight-county area received an estimated 2,400 tons of supplies by air in 1992.

- ***Air cargo comprises a small fraction of local manufacturers' total shipments, less than the national average.***

  - Local manufacturers ship under 8 percent of their products by air; 70 percent of their products are shipped by truck.

  - Nationally, manufacturers ship about 10 percent of their products by air; 60 percent of their products are shipped by truck.

- ***Area manufacturers typically regard air cargo as the transportation mode of last resort.***

  - Surveyed manufacturers do not use air freight more often because of cost and lack of demand.

  - Most of the area's air cargo is limited to expedient service to meet customers' emergencies or when standard links in a firm's product/part systems break down.

  - Area manufacturers sell 57 percent of their products to customers within 500 miles, and they purchase about 70 percent of their supplies from suppliers within 500 miles.

- ***Area manufacturers find current air cargo service satisfactory.***

  - All the major freight air freight carriers serve the Calhoun-Kalamazoo region and offer competitive overnight delivery. In addition, area freight forwarders are ready to arrange expedient air freight services.

  - One-third of the manufacturing firms surveyed identified the area's existing air cargo service as a strength to the area; 12 percent identified it as a weakness.

- ***The air cargo industry is highly flexible and can expand delivery upon short notice.***

  - Air freight carriers and forwarders are highly competitive even in the smaller metropolitan areas such as the Kalamazoo-Battle Creek MSA.

- The availability of leased planes allows the region's cargo fleet to expand almost immediately.

- ***The growth of air cargo facilities depends upon their proximity to centers of economic activity.***

  - The Toledo Airport and the Rickenbacker Airport are located in the heart of the industrial Midwest and within one day by truck to major metropolitan areas of Detroit, Cleveland, Chicago, Indianapolis, Pittsburgh, Cincinnati and all points in between. The Alliance Airport is in the heart of the rapidly growing Texas economy. On the other hand, the less successful North Carolina Tradeport and the Pease Tradeport in New Hampshire are located away from major manufacturing centers.

  - In addition, port cities such as Miami, Newark, and Los Angeles have very active air cargo facilities. Rather surprisingly, sea-to-air links are heavily used by industry, even though it links one of the slowing modes of transportation to the fastest. In a just-in-time product flow, delays in ship arrivals due to storms or to delays in loading or unloading force companies to transfer the cargo at the port and fly it to the production plant.

- ***Existing tradeports have not attracted new manufacturing jobs.***

  - None of the existing tradeports has attracted manufacturing firms, except for the Alliance Airport where a company recently annnounced plans to build a manufacturing facility next to its existing warehouse.

  - Willow Run is near auto assembly plants which use its air cargo facilities; however, proposed improvements at the airport are not expected to attract additional manufacturing firms.

  - Most research shows that transportation investment accommodates regional growth but does not stimulate growth.

- ***The capital improvements that would be necessary to develop the minimum infrastructure for a tradeport at the W.K. Kellogg Regional Airport would cost at least $7.8 million dollars and could reach to $12.3 million dollars.***

  - The development of a tradeport would require the construction of plane taxilanes, aircraft apron, cargo building and road construction and improvements. The major difference between the low and high cost estimates is the size of the cargo building: 60,000 square feet versus 120,000 square feet.

- ***Given both the poor track record of other tradeports and air cargo airports in attracting manufacturing activities and the type of industries in southwest Michigan, the development of a tradeport would have only a minimal impact on the local economy.***

  - As shown in Table 1, in the high-growth scenario where a tradeport at the W.K. Kellogg Regional Airport captures all of the air cargo traffic in West Michigan, including the Grand Rapids area, the employment impact in the two-county area would reach only 162 in the year 2001, five years after its completion.

  - In the low-growth scenario where the tradeport captures all of the estimated potential air cargo shipments in Calhoun, Kalamazoo, and surrounding counties of Allegan, Barry, Branch, Cass, St. Joseph and Van Buren, the facility's employment impact would be only 87 workers after five years of operations.

  - The low estimates in both scenarios result primarily from the experience of the other tradeports in not attracting manufacturing firms.

- ***Regardless of whether the tradeport was operated under either a one-county or two-county authority, a tradeport would lose money in both the high- and low-growth scenarios.***

  - In both scenarios, the one-county authority would suffer the greater losses due to absence of the per capita contribution from Kalamazoo County.

Table 1
Economic and Fiscal Impact of An International Tradeport
High-Growth Scenario

Activity	Construction	year one	year two	year three	year four	year five
Employment	124	118	127	138	150	162
Direct	90	85	92	100	108	117
Indirect	34	33	35	38	42	45
Personal Income ($mil)	$4.07	$4.32	$5.02	$5.86	$6.87	$8.07
Fiscal Impact						
One-County ($000)	-1,299.2	-980.9	-947.7	-911.5	-872.1	-829.1
Two-County ($000)	-1,074.2	-755.9	-722.7	-686.5	-647	-604.1

Source: W.E. Upjohn Institute

Table 2
Economic and Fiscal Impact of a International Tradeport
Low-Growth Scenario

Activity	Construction	year one	year two	year three	year four	year five
Employment	80	64	68	75	80	87
Direct	57	46	49	54	58	63
Indirect	23	18	19	21	22	24
Personal Income ($mil)	$2.62	$2.41	$2.79	$3.21	$3.74	$4.41
Net Fiscal Impact						
One-County ($000)	-$777.8	-602.6	-584.7	-565.1	-543.8	-520.6
Two-County ($000)	-$552.8	-377.6	-359.7	-340.1	-318.8	-295.6

Source: W.E. Upjohn Institute

- ***Air cargo airports (not necessarily tradeports) can generate significant employment opportunities in shipping and distribution industries.***

  - An air cargo hub can employ thousands of workers. In Toledo, Burlington Air Express employs approximately 1,000 workers at its new air cargo hub. Nearly 5,000 individuals are employed on site at the Rickenbacker Airfield in Columbus, Ohio and over 2,700 individuals are employed at the various activities at the Alliance Tradeport in Fort Worth, Texas.

- ***Air cargo facilities lose money.***

  - Air cargo does not pull its own weight. Air cargo does not generate two major sources of airport revenue: terminal counter rentals and auto parking.

- ***The competition for air cargo hub facilities and air carrier (passenger and cargo) maintenance centers is extremely aggressive.***

  - Air freight carriers often move in and out of smaller airports as demand changes and distribution networks are altered.

Pre-Conditions for Regional Cooperation and Suggested Opportunities

Most leaders agree that there are benefits in pooling resources and constructing a critical mass of assets that can be harnessed to generate economic growth. Several pre-conditions are needed to make these efforts successful.

- An urgent situation occurs which calls for cooperative action.

- The existence of a political constituency that is focused on the importance of cooperative approach to economic development.

- Early and continuing support by elected officials.

- Evidence showing that a cooperative effort is in everyone's interest.

- The emergence of a leader who can move the effort to completion.

- A project with a clearly perceived benefit.

Suggested opportunities for regional cooperation include:

- ***Develop an extensive land-use plan for the Fort Custer military reservation, which would be the cornerstone for industrial development along the I-94 corridor stretching the length of Calhoun and Kalamazoo Counties.***

  - Fort Custer provides a large parcel of prime land between the cities of Battle Creek and Kalamazoo that can offer a focal point for future development of the two-county area.

  - Such a development would exploit one of the area's identified strengths, highway accessibility.

  - The Fort Custer development could be marketed as having access to an airport that could be used for freight distribution.

  - The project would benefit from a cooperative water and sewer agreement by Charleston Township and the City of Battle Creek. Planned water and sewer projects in the southwest corner of the City of Battle Creek offer the opportunity for developing this area in a cooperative agreement.

- ***Enhance training and education services.***

  - Surveyed manufacturers gave high marks to the region's higher education institutions. At the same time, they indicated a serious shortage of trained workers. The region's business community would strongly benefit from a regional effort that would:

    - achieve better coordination of training/education programs being offered in the two-county area and

    - enhance business involvement in designing course curriculum.

- ***Develop a one-stop approach for businesses to obtain zoning and building permits within the two-county area.***

    - Many high-performing MSAs have been successful in establishing a central office that coordinates zoning and governmental permitting procedures; however, rarely have these efforts crossed county lines.

- ***Develop a regional marketing effort which focuses on the assets shared by the two-county region.***

    - The existing assets of W.K. Kellogg Regional Airport, Western Michigan University, and Fort Custer Industrial Park could be marketed jointly by both counties.

Section I
Introduction

The business world is moving faster and stretching farther than ever before. New markets, new competitors, and new products and services constantly challenge communities within the Great Lakes Region and around the world to reexamine their current and future positions in the global marketplace. Business, government, and civic leaders in Calhoun and Kalamazoo Counties have accepted this challenge and are exploring ways to work together to ensure that area businesses have the proper resources and are free from undue burdens to remain competitive.

The economies of the two counties have been linked throughout their history. Calhoun County's cereal industry has long been an important customer to Kalamazoo County's paper industry, for example. Although many industries in the two-county area share the same labor force and sell to the same customers (e.g. the auto industry), the counties' economic development efforts and community leaders have opted for independent and often competing paths, instead of exploring more cooperative ventures.

To many outsiders, the two-county area appears as one. The area maintains one passenger airport, houses a university, supports both a professional baseball and hockey team and offers a zoo. In fact the economic linkages, including cross-commuting of residents, grew to such an extent that the U.S. Census Bureau declared the two-county region as part of a greater metropolitan statistical area which also includes Van Buren County. According to the Michigan Employment Security Commission (MESC), firms in the three-county area draw from the same labor pool. Moreover, residents and businesses from each county are beginning to see opportunities in viewing the region as a whole. Residents have increasingly frequented cultural events and recreational facilities, and businesses have forged stronger customer and supplier linkages.

These changes have persuaded local leaders to investigate the advantages of viewing the two counties together for monitoring and planning purposes. Leaders from both counties have made overtures to increase cooperation in economic development efforts and in marketing the region. The most recent and probably most concrete proposal has been the creation of an international tradeport.

An international tradeport is a fully-integrated transportation, distribution, and manufacturing complex. A tradeport would enable firms to operate in a just-in-time manufacturing environment where:

- the components and supplies would be flown in directly to the plant and unloaded in a foreign trade zone environment;

- a material handling system incorporating conveyors or transfer vehicles would ensure prompt delivery of components and supplies, as well as, the distribution of final products;

- a state-of-the-art communications system would be available for the transfer of design documents, orders and new product specifications;

- intermodal transfer facilities would be available to quickly transfer containers from incoming airplanes to trucks or rail, and vice versa;

- a business jet service would be available to ease the movement of technical and managerial personnel;

- assembly operations could be conducted in a foreign trade zone environment and shipped to a foreign customer in the same day; and

- computerized warehousing services would be available for firms that need to respond to customer orders within a 24-hour period.

These functions would be handled in an efficient manner due to the fact that the facility would be built for one purpose only: to facilitate the transportation and assembly of goods. Unlike major airports, manufacturing needs would not come second to those of passenger travel.

The two counties have in place key elements necessary to create an international tradeport: the Fort Custer Industrial Park and the W.K. Kellogg Regional Airport which are located between the population centers of each county. Firms located at the industrial park employ over 4,000 workers, and over 1,000 acres of land is still available for development. The airport's 10,000 foot runway is long enough to accommodate most large commercial cargo planes. Both facilities have immediate access to I-94 highway and a rail line offering intermodal transportation opportunities.

To transform these existing facilities into a tradeport, however, additional investment is necessary. At a minimum, taxilanes need to be renovated, an apron for parking planes must be built, warehouse and cargo-loading facilities constructed, and roads and utilities expanded.

Recently, the Michigan legislature approved a funding mechanism and a governing structure for a state-authorized international tradeport. While other funding and governing arrangements are possible and are being explored, the International Tradeport Development Authority Act (PA325) offers a structure for Calhoun and Kalamazoo Counties to join forces to promote economic development within the region.

The purpose of this report is threefold. First, the report provides a perspective on economic development in the Calhoun-Kalamazoo area compared with other metropolitan areas in the Great Lakes Region.

- Since the purpose of the tradeport is to improve the competitive advantage of existing businesses in this area and to attract new businesses, it is important first to understand the area's position among other regional economies. To provide this comparison, we examine the employment and personal income growth of 49 similar-sized metropolitan areas within the Great Lakes Region.

- Recent announcements regarding plant closures, downsizing and mergers jeopardize the area's future growth. We estimate the number of new jobs that will be required in the next ten years simply to make up for the expected total areawide job losses due to these announced job losses.

- We next identify those metropolitan areas that have grown faster than the Calhoun-Kalamazoo region, and take inventory of the various economic development programs they have pursued. We also list other circumstances that may account for differences in their growth rates.

- We report results from a survey of local CEOs in the region who were asked to assess the region's strengths and weaknesses with respect to their businesses. The responses are tabulated for the combined counties as well as separately for each county in order to show the differences and complementaries of various perceived strengths and weaknesses.

Second, the report assesses the likelihood and extent to which the tradeport is expected to stimulate economic growth in the region. We examine five key elements that are necessary for the viability of the tradeport and for the tradeport to significantly impact the local economy:

- national and international trends in air cargo usage;

- current demand for air cargo, both scheduled and on-demand, by businesses in the region;

- current delivery of air cargo services and customers' satisfaction with the present service;

- future demand for air cargo by existing firms;

- the identification of the type of industry that would use a tradeport and estimate the likelihood that a tradeport would attract additional businesses.

Several sources of information are drawn upon to address these issues: a survey of local businesses regarding transportation usage, a series of focus group sessions with area businesses, the experience of other tradeports around the country, nationwide estimates

of different amounts of transportation use by industry, and government and industry forecasts of the future demand for air cargo.

Using a detailed econometric model for the two-county economy, we estimate the economic and fiscal impact of a tradeport. Two key components are entered into this forecast: 1) estimates of the reduction in transportation costs of businesses with access to the tradeport, and 2) the benefits to the region of investment in the facility. We consider two investment scenarios for creating a tradeport. The first scenario includes only the minimal investment scenario necessary to transform existing facilities into a tradeport. This investment amounts to $7.8 million. The second scenario entails a much greater $12.3 million investment, and would make the tradeport cargo facilities comparable to the currently planned air cargo facility at the Kent County International Airport in Grand Rapids.

Finally, the report identifies the pre-conditions which can enhance the likelihood of the success of regional cooperation efforts. Furthermore, it offers for consideration additional opportunities for regional cooperation efforts.

Section II
A Regional Approach in Confronting a Competitive Manufacturing Environment

Calhoun and Kalamazoo counties have a rich manufacturing tradition and continue to maintain a healthy environment for manufacturers. Nevertheless, as recent announcements have clearly shown, the area is not immune to the pressures of national and international competition. Due to intense market pressure, the Kellogg Company is eliminating 800 area manufacturing jobs. General Motors still schedules to close its Kalamazoo County plant in 1998. In addition, the Upjohn Company's merger with Pharmacia AB illustrates that to compete in the international marketplace, a larger "critical mass" of resources may be required than one company can provide.

Even before these disturbing developments occurred, community and business leaders were aware that the area could not rest on its past successes. To grow, the community must be ever vigilant in its effort to create a productive, cost-effective environment for its current and future industrial employers. In addition, business and community leaders believe that, like the complementary strengths between Upjohn Company and Pharmacia AB, an economic strategy builds on the strengths and assets of the two counties to form a larger "critical mass" of assets and resources would generate a new effort that could be greater than its individual parts.

In this section, we review the important role that manufacturers hold in the two-county area and the dynamic environment in which they compete. In addition, we examine the area's relative performance to that of other metropolitan areas in the Great Lakes Region. We forecast the job generation necessary in the next ten years to maintain the area's current growth rate. Finally, we review the economic development practices of the best-performing communities to see what can be learned from their apparently successful efforts.

Manufacturing Matters in Southwest Michigan

Southwest Michigan has established itself as a solid manufacturing center. Through the years, the area has developed a highly-prized and competitive manufacturing workforce, generated many specialized service industries for area manufacturers, and witnessed growing economic linkages between the two counties. The industrial base of southwest Michigan is quite impressive. As shown in Table 3, manufacturing accounted for 24 percent of southwest Michigan's employed workforce and generated 38.1 percent of the area's total earnings in 1993. In sharp contrast, manufacturing accounts for only 13.3 percent of the nation's employed workers and 18.4 percent of its total earnings.

However, to compete in today's global manufacturing environment, the region's manufacturers continuously demand excellence from their workers and suppliers. In addition, the region's competitiveness depends upon a first-class support structure including

public infrastructure, private transportation, and business services. Business analysts and local manufacutrers agree that the area's manufacturers must:

- build stronger and more efficient linkages between suppliers, final assemblers, and customers,
- keep leaner inventories,
- run shorter batch jobs,
- share more design and research responsibilities with suppliers, and
- satisfy their customers' requirements for faster deliveries.

Table 3 - Importance of Manufacturing Activities in Southwest Michigan, 1993

AREA	Manufacturing Employment	Percent of Total Employment	Manufacturing Earnings	Percent of Total Earnings
Kalamazoo	28,591	20.3	1,318,229	34.1
Calhoun	16,922	23.0	767,411	37.5
Allegan	15,321	36.7	535,502	52.6
Barry	2,796	18.3	102,110	32.3
Branch	3,090	19.1	90,302	25.4
St. Joseph	9,226	32.7	346,126	50.5
Southwest Michigan	75,946	24.0	3,159,680	38.1
Michigan	926,431	19.2	45,062,177	32.0
U. S.	18,738,500	13.3	709,578,000	18.4

Source: Bureau of Economic Analysis: Regional Economic Information System

Comparative Analysis

Calhoun and Kalamazoo Counties compete with other metropolitan areas throughout the nation and the world for new private investment. This interregional competition exists not only in the highly publicized site location sweepstakes, such as Saturn or Whirlpool, but is also present every time a firm considers an expansion or contraction. Most multi-branch companies and even single-establishment firms consider geographical options at times of expansion, and competing communities stand ready to assist. Over 40 percent of Kalamazoo County's manufacturing firms interviewed in the CEO Council's 1993 annual business survey

revealed that they had been contacted by, at least, one economic development organization out of the area.

Economic research indicates that most firms when deciding to locate their facilities, first determine the region they want to expand into and then choose the specific metropolitan or nonmetropolitan area. Firms base their selection on a region's market characteristics and the availability of suppliers and resources. Local communities tend to have little influence during this stage of the selection process; the competition begins once the firm has identified the region and is exploring actual sites.

For this reason, we compare the relative economic performance of the Kalamazoo-Battle Creek MSA (Calhoun, Kalamazoo and Van Buren Counties) to 48 other similar-sized metropolitan areas in the Great Lakes States (Illinois, Indiana, Iowa, Michigan, Ohio, Pennsylvania, and Wisconsin). In 1993, these metropolitan areas range in size from just under 1 million in population (Grand Rapids-Muskegon-Holland) to just over 120,000 (Waterloo-Cedar Falls, Iowa). The average size of the sample's population base in 1993 was 366,800, while the Kalamazoo-Battle Creek MSA housed 440,200 people.

The period of analysis stretches across two time periods: 1983 to 1993 and 1979 to 1990. The first period begins at the start of 1983-1990 expansion and ends near the beginning of the current expansion. The latter period spans two expansionary peaks and includes the harsh 1981-1982 recession. Both periods are of interest for they illustrate the stability of the various metropolitan areas during different stages in the national business cycle.

The metropolitan areas are ranked by growth in employment, real per capita income, and population from 1983 to 1993 in Tables 4 through 6. During that period, the Kalamazoo-Battle Creek MSA ranked 12th in total employment growth and 13th in real per capita income growth among the 49 MSAs. In population growth, the Kalamazoo-Battle Creek MSA dropped to twentieth. During the ten-year period ending in 1993, employment grew at an average annual rate of 2.45 percent in the Kalamazoo-Battle Creek MSA (Table 4). On average, employment grew at a 2.05 percent annual rate in the 49 MSAs. For nearly all the MSAs in the sample, employment growth was more rapid in the 1983-1993 period than in the earlier 1979 to 1990 period. For the Kalamazoo-Battle Creek MSA, employment grew at a 1.17 percent average annual rate during the 11-year period which was slightly below the sample average of 1.18 percent.

Surprisingly, the slower relative rate of growth in the Kalamazoo-Battle Creek MSA during the 1979 to 1990 period cannot be explained by employment declines in manufacturing. Even with the closure of Clark Equipment's and Eaton's production facilities in the early 1980s which resulted in the loss of thousands of jobs, the metropolitan area's decline in manufacturing employment was not as bad as for the average for the 49 MSAs (Table 7). In fact, even with the loss of Clark and Eaton, the area's relative ranking among the 49 other metropolitan areas remained stable, dropping only to 14th place. The inability of the metropolitan area to keep up with the other faster growing metropolitan areas of the Great Lakes States was due to the lack of growth in its nonmanufacturing sectors.

As shown in Table 8, employment in the Kalamazoo-Battle Creek MSA nonmanufacturing sector grew at a subpar 1.7 percent average annual rate during the 1979 to 1990 period, pulling down its overall relative performance. The area ranked 28th and was below the average annual growth rate for the group of 1.8 percent.

Employment has become the standard measure of economic performance of metropolitan areas; however, growth in real per capita income is a better measure as it reflects changes in real purchasing power of area residents. In the 1983-1993 period real per capita income rose at a 1.85 percent annual rate in the Kalamazoo-Battle Creek MSA, ranking 13th among the sample metropolitan areas (Table 5). The average annual rate of growth for the entire sample was 1.56 percent. During the more troubled 1979 to 1990 period, real per capita income in the Kalamazoo-Battle Creek area grew at an lower 0.8 percent annual pace, again above average (0.6 percent), but still pulling it down in the rankings to 18th.

Again, the area's manufacturing sector is not the cause of the area's relative decline in per capita employment during the 1979 to 1990 period. As shown in Table 9, although real manufacturing earnings in the area fell at a 1.07 percent rate during the period, its relative performance was well above the mean of the 49 metropolitan areas, a decline of 2.37 percent, annualized. In fact, the Kalamazoo-Battle Creek MSA relative ranking dropped in the faster growing 1983 to 1993 period.

Finally, one of the reasons that Kalamazoo-Battle Creek MSA's better-than-average real per capita income grew faster than average is due to its lackluster population growth during the 1980s. As shown in Table 6, area population grew at a modest 0.56 percent average rate during the 1983-1993 and at a lower 0.25 percent pace in the 1979-1990 period. While both rates were above average, they placed the area 20th among the region's metropolitan areas in both periods.

Table 4 - Growth in Total Employment

83-93 Ranking	Total Employment	Average Annual % Change 83-93 Percent	79-90 Percent	79-90 Ranking
1	Green Bay, WI	3.37	2.71	3
2	Madison, WI	3.33	2.88	1
3	Grand Rapids-Muskegon-Holland, MSA	3.02	2.57	5
4	Ann Arbor, MI	2.96	2.51	6
5	Elkhart-Goshen, IN	2.95	2.74	2
6	Appleton-Oshkosh-Neenah	2.90	1.98	9
7	Fort Wayne, IN	2.86	1.56	16
8	Des Moines, IA	2.65	1.93	11
9	Bloomington-Normal, IL	2.61	2.25	7
10	Lancaster, PA	2.48	2.61	4
11	Cedar Rapids, IA	2.46	0.96	25
12	Kalamazoo-Battle Creek, MI	2.45	1.17	22
13	Louisville, KY-IN	2.38	1.28	20
14	Harrisburg-Lebanon-Carlisle, PA	2.36	2.14	8
15	Eau Claire, WI	2.26	1.93	10
16	South Bend, IN	2.23	1.31	19
17	Hamilton-Middletown, OH	2.23	1.38	18
18	Lansing-East Lansing, MI	2.21	1.75	14
19	York, PA	2.07	1.72	15
20	Akron, OH	2.06	0.95	26
21	Rockford, IL	2.06	1.03	24
	AVERAGE	2.05	1.18	
22	Janesville-Beloit, WI	2.00	0.92	27
23	Altoona, PA	1.92	0.51	35
24	Springfield, IL	1.89	1.76	13
25	Racine, WI	1.85	0.65	32
26	Terre Haute, IN	1.81	0.13	39
27	Erie, PA	1.76	0.51	34
28	Dayton-Springfield, OH	1.75	1.20	21
29	Saginaw-Bay City-Midland, MI	1.72	0.44	36
30	Evansville-Henderson, IN-KY	1.71	0.84	30
31	Toledo, OH	1.71	0.91	28
32	Peoria-Pekin, IL	1.68	-0.09	42
33	Duluth-Superior, MN-WI	1.61	-0.34	45
34	Canton-Massillon, OH	1.61	0.58	33
35	Allentown-Bethlehem-Easton, PA	1.59	1.12	23
36	Lima, OH	1.57	0.72	31
37	Benton Harbor, MI	1.52	0.23	38
38	Johnstown, PA	1.47	-0.12	44
39	Youngstown-Warren, OH	1.42	-0.04	40
40	Jackson, MI	1.35	-0.07	41
41	Champaign-Urbana, IL	1.32	1.78	12
42	Scranton-Wilkes Barre-Hazleton, PA	1.32	0.86	29
43	Gary, IN	1.29	-0.56	48
44	Reading, PA	1.29	1.44	17
45	Davenport-Moline-Rock Island, IA-IL	1.29	-0.10	43
46	Waterloo-Cedar Falls, IA	1.18	-0.52	47
47	Kenosha, WI	1.18	-0.62	49
48	Mansfield, OH	1.08	0.29	37
49	Flint, MI	0.55	-0 47	46

Source: Bureau of Economic Analysis

Table 5 - Growth in Real Per Capita Income

83-93 Ranking		Average Annual Percent Change		
		83-93 Percent	79-90 Percent	79-90 Ranking
1	Fort Wayne, IN	2.23	0.84	13
2	Louisville, KY-IN	2.22	1.38	3
3	Harrisburg-Lebanon-Carlisle, PA	2.22	1.74	1
4	Altoona, PA	2.14	0.69	21
5	Madison, WI	2.11	0.98	9
6	Ann Arbor, MI	2.04	0.91	10
7	Grand Rapids-Muskegon-Holland, MSA	1.98	0.72	19
8	Scranton-WIkes-Barre-Hazleton, PA	1.96	1.47	2
9	Peoria-Pekin, IL	1.90	0.08	44
10	Erie, PA	1.90	0.71	20
11	Appleton-Oshkosh-Neenah	1.89	0.86	12
12	Springfield, IL	1.88	1.07	5
13	Kalamazoo-Battle Creek, MI	1.85	0.78	18
14	Duluth-Superior, MN-WI	1.84	0.16	42
15	Benton Harbor, MI	1.80	0.69	24
16	Lancaster, PA	1.77	1.21	4
17	Green Bay, WI	1.77	1.06	6
18	Janesville-Beloit, WI	1.72	0.69	23
19	Dayton-Springfield, OH	1.63	0.81	16
20	Bloomington-Normal, IL	1.61	0.67	25
21	Youngstown-Warren, OH	1.60	0.20	41
22	Terre Haute, IN	1.59	0.25	40
23	Johnstown, PA	1.59	0.09	43
24	Eau Claire, WI	1.57	1.02	7
	AVERAGE	1.56	0.60	
25	Racine, WI	1.55	0.40	34
26	Saginaw-Bay City-Midland, MI	1.55	0.26	39
27	Cedar Rapids, IA	1.51	0.47	32
28	Elkhart-Goshen, IN	1.51	0.66	26
29	Allentown-Bethlehem-Easton, PA	1.50	0.87	11
30	Champaign-Urbana, IL	1.49	0.81	15
31	Evansville-Henderson, IN-KY	1.48	0.52	30
32	Gary, IN	1.47	-0.05	45
33	Davenport-Moline-Rock Island, IA-IL	1.47	0.36	37
34	Akron, OH	1.46	0.80	17
35	Lima, OH	1.43	0.49	31
36	Des Moines, IA	1.43	0.53	29
37	South Bend, IN	1.43	0.58	28
38	Rockford, IL	1.38	0.58	27
39	Toledo, OH	1.33	0.44	33
40	Lansing-East Lansing, MI	1.24	0.39	36
41	Canton-Massillon, OH	1.17	0.27	38
42	York, PA	1.16	0.84	14
43	Reading, PA	1.11	0.99	8
44	Hamilton-Middletown, OH	1.07	0.69	22
45	Jackson, MI	0.90	-0.21	47
46	Waterloo-Cedar Falls, IA	0.89	-0.52	49
47	Mansfield, OH	0.78	0.40	35
48	Flint, MI	0.74	-0.47	48
49	Kenosha, WI	0.35	-0.18	46

Source: Bureau of Economic Analysis

Table 6 - Growth in Population

83-93 Ranking		Average Annual Percent Change		
		83-93 Percent	79-90 Percent	79-90 Ranking
1	Hamilton-Middletown, OH	1.63	1.22	4
2	Lancaster, PA	1.55	1.53	1
3	Elkhart-Goshen, IN	1.53	1.23	3
4	Madison, WI	1.43	1.35	2
5	Grand Rapids-Muskegon-Holland, MSA	1.34	1.14	5
6	Green Bay, WI	1.24	1.10	6
7	Ann Arbor, MI	1.24	0.81	10
8	Bloomington-Normal, IL	1.14	0.84	9
9	Kenosha, WI	1.12	0.41	17
10	York, PA	1.10	0.86	8
11	Des Moines, IA	1.07	0.69	13
12	Appleton-Oshkosh-Neenah	1.03	0.86	7
13	Allentown-Bethlehem-Easton, PA	0.91	0.73	11
14	Reading, PA	0.89	0.71	12
15	Fort Wayne, IN	0.77	0.26	19
16	Harrisburg-Lebanon-Carlisle, PA	0.72	0.61	14
17	Rockford, IL	0.58	0.20	22
18	South Bend, IN	0.58	0.20	23
19	Racine, WI	0.57	0.17	24
20	Kalamazoo-Battle Creek, MI	0.56	0.25	20
21	Cedar Rapids, IA	0.55	0.07	27
22	Lansing-East Lansing, MI	0.54	0.43	16
23	Eau Claire, WI	0.53	0.57	15
24	Jackson, MI	0.45	-0.10	34
	AVERAGE	0.42	0.17	
25	Janesville-Beloit, WI	0.38	0.01	29
26	Springfield, IL	0.34	0.12	25
27	Dayton-Springfield, OH	0.32	0.10	26
28	Lima, OH	0.31	0.05	28
29	Akron, OH	0.30	-0.02	31
30	Evansville-Henderson, IN-KY	0.24	0.21	21
31	Louisville, KY-IN	0.20	-0.07	32
32	Toledo, OH	0.04	-0.01	30
33	Benton Harbor, MI	0.02	-0.66	45
34	Champaign-Urbana, IL	0.01	0.27	18
35	Canton-Massillon, OH	0.01	-0.19	35
36	Flint, MI	-0.08	-0.41	39
37	Mansfield, OH	-0.09	-0.36	38
38	Erie, PA	-0.09	-0.10	33
39	Saginaw-Bay City-Midland, MI	-0.14	-0.47	40
40	Gary, IN	-0.18	-0.59	42
41	Terre Haute, IN	-0.19	-0.35	37
42	Scranton-Wilkes-Barre-Hazleton, PA	-0.19	-0.34	36
43	Altoona, PA	-0.20	-0.50	41
44	Youngstown-Warren, OH	-0.47	-0.62	44
45	Peoria-Pekin, IL	-0.49	-0.59	43
46	Davenport-Moline-Rock Island, IA-IL	-0.60	-0.81	46
47	Duluth-Superior, MN-WI	-0.64	-0.91	48
48	Johnstown, PA	-0.70	-0.93	49
49	Waterloo-Cedar Falls, IA	-0.90	-0.86	47

Source: Bureau of Economic Analysis

Table 7 - Growth in Manufacturing Employment

83-93 Ranking		Average Annual Percent Change		
		83-93 Percent	79-90 Percent	79-90 Ranking
1	Champaign-Urbana, IL	4.03	3.87	1
2	Madison, WI	3.66	2.79	2
3	Bloomington-Normal, IL	3.40	0.48	8
4	Duluth-Superior, MN-WI	2.74	-1.33	17
5	Elkhart-Goshen, IN	2.71	2.59	3
6	Fort Wayne, IN	2.46	-0.68	10
7	Grand Rapids-Muskegon-Holland, MSA	2.10	0.76	6
8	Appleton-Oshkosh-Neenah	2.04	0.64	7
9	Green Bay, WI	1.78	1.20	5
10	Ann Arbor, MI	1.31	-1.04	12
11	Eau Claire, WI	1.27	2.03	4
12	Kalamazoo-Battle Creek, MI	1.23	-1.05	14
13	Des Moines, IA	1.17	-0.74	11
14	Terre Haute, IN	1.10	-2.70	35
15	Evansville-Henderson, IN-KY	1.03	-1.48	19
16	Benton Harbor, MI	0.69	-1.40	18
17	Lima, OH	0.69	-1.05	15
18	Jackson, MI	0.67	-2.31	28
19	Peoria-Pekin, IL	0.48	-3.68	41
20	Louisville, KY-IN	0.44	-2.32	29
21	Janesville-Beloit, WI	0.43	-1.50	20
22	Erie, PA	0.37	-1.92	26
23	Racine, WI	0.29	-1.70	24
24	Lancaster, PA	0.24	-0.24	9
25	Rockford, IL	0.22	-1.05	13
26	Canton-Massillon, OH	0.21	-2.43	33
27	Johnstown, PA	0.18	-3.31	40
	AVERAGE	0.05	-1.92	
28	Dayton-Springfield, OH	-0.01	-1.57	22
29	Cedar Rapids, IA	-0.13	-3.11	39
30	Akron, OH	-0.26	-2.37	32
31	Saginaw-Bay City-Midland, MI	-0.37	-2.96	38
32	York, PA	-0.60	-1.70	23
33	Harrisburg-Lebanon-Carlisle, PA	-0.61	-1.51	21
34	South Bend, IN	-0.65	-2.85	36
35	Altoona, PA	-0.71	-1.82	25
36	Toledo, OH	-0.71	-2.68	34
37	Youngstown-Warren, OH	-0.99	-4.48	44
38	Mansfield, OH	-1.13	-2.28	27
39	Springfield, IL	-1.34	-4.76	47
40	Reading, PA	-1.34	-1.30	16
41	Waterloo-Cedar Falls, IA	-1.37	-4.38	43
42	Scranton-Wilkes Barre-Hazleton, PA	-1.38	-2.35	31
43	Davenport-Moline-Rock Island, IA-IL	-1.58	-4.63	46
44	Lansing-East Lansing, MI	-1.75	-2.32	30
45	Hamilton-Middletown, OH	-2.11	-2.91	37
46	Allentown-Bethlehem-Easton, PA	-2.18	-3.88	42
47	Gary, IN	-2.78	-5.82	49
48	Flint, MI	-2.90	-4.63	45
49	Kenosha, WI	-3.89	-0 06	48

Source: Bureau of Economic Analysis

Table 8 - Growth in Nonmanufacturing Employment

93 -83 Ranking		Average Annual Percent Change		
		83 - 93 Percent	79 - 90 Percent	79 -90 Ranking
1	Green Bay, WI	3.78%	2.84%	6
2	Hamilton-Middletown, OH	3.39%	2.49%	10
3	Ann Arbor, MI	3.36%	3.26%	2
4	Grand Rapids-Muskegon-Holland, MSA	3.35%	2.97%	4
5	Madison, WI	3.29%	2.62%	7
6	Lancaster, PA	3.29%	3.40%	1
7	Appleton-Oshkosh-Neenah	3.24%	2.33%	12
8	Elkhart-Goshen, IN	3.16%	2.60%	9
9	York, PA	3.16%	3.02%	3
10	Cedar Rapids, IA	3.13%	2.11%	17
11	Fort Wayne, IN	2.98%	2.15%	16
12	Lansing-East Lansing, MI	2.90%	2.31%	13
13	Kenosha, WI	2.89%	1.10%	41
14	Harrisburg-Lebanon-Carlisle, PA	2.88%	2.61%	8
15	Allentown-Bethlehem-Easton, PA	2.88%	2.88%	5
16	South Bend, IN	2.86%	2.15%	15
17	Des Moines, IA	2.81%	2.06%	18
18	Kalamazoo-Battle Creek, MI	2.80%	1.74%	28
19	Rockford, IL	2.80%	1.93%	21
20	Louisville, KY-IN	2.78%	1.96%	19
21	Akron, OH	2.68%	1.83%	22
22	Janesville-Beloit, WI	2.57%	1.76%	25
23	Bloomington-Normal, IL	2.53%	2.24%	14
24	Gary, IN	2.52%	1.30%	39
25	Racine, WI	2.51%	1.71%	30
26	Altoona, PA	2.48%	0.96%	43
	AVERAGE	2.43%	1.77%	24
27	Eau Claire, WI	2.42%	1.74%	27
28	Saginaw-Bay City-Midland, MI	2.37%	1.58%	31
29	Reading, PA	2.29%	2.37%	11
30	Toledo, OH	2.26%	1.72%	29
31	Erie, PA	2.25%	1.39%	35
32	Dayton-Springfield, OH	2.19%	1.83%	23
33	Youngstown-Warren, OH	2.11%	1.43%	34
34	Scranton-Wilkes Barre-Hazleton, PA	2.10%	1.75%	26
35	Canton-Massillon, OH	2.05%	1.57%	32
36	Springfield, IL	2.03%	1.93%	20
37	Terre Haute, IN	1.96%	0.77%	46
38	Flint, MI	1.95%	1.36%	36
39	Peoria-Pekin, IL	1.94%	0.90%	44
40	Mansfield, OH	1.93%	1.32%	38
41	Waterloo-Cedar Falls, IA	1.89%	0.71%	47
42	Evansville-Henderson, IN-KY	1.88%	1.36%	37
43	Lima, OH	1.88%	1.30%	40
44	Davenport-Moline-Rock Island, IA-IL	1.87%	1.01%	42
45	Benton Harbor, MI	1.81%	0.82%	45
46	Johnstown, PA	1.66%	0.48%	49
47	Duluth-Superior, MN-WI	1.52%	-0.22%	50
48	Jackson, MI	1.52%	0.54%	48
49	Champaign-Urbana, IL	1.07%	1.44%	33

Source: Bureau of Economic Analysis

Table 9 - Manufacturing Real Earnings

83 - 93 ranking		83 - 93 percent change	79 - 90 percent change	79 - 90 ranking
1	Bloomington-Normal, IL	7.15%	2.11%	2
2	Champaign-Urbana, IL	3.94%	2.70%	1
3	Duluth-Superior, MN-WI	3.71%	-1.09%	12
4	Madison, WI	3.69%	1.91%	3
5	Elkhart-Goshen, IN	2.63%	1.47%	4
6	Fort Wayne, IN	2.59%	-1.27%	13
7	Grand Rapids-Muskegon-Holland, MSA	2.39%	0.61%	7
8	Appleton-Oshkosh-Neenah	2.24%	0.45%	8
9	Green Bay, WI	1.45%	1.01%	6
10	Ann Arbor, MI	1.40%	-1.68%	18
11	Benton Harbor, MI	1.24%	-2.50%	28
12	Lancaster, PA	1.22%	-0.26%	9
13	Kalamazoo-Battle Creek, MI	1.17%	-1.07%	11
14	Des Moines, IA	1.10%	-1.90%	22
15	Racine, WI	1.09%	-1.79%	20
16	Terre Haute, IN	1.06%	-2.29%	26
17	Peoria-Pekin, IL	0.99%	-3.63%	38
18	Janesville-Beloit, WI	0.96%	-1.76%	19
19	Rockford, IL	0.76%	-1.34%	14
20	Evansville-Henderson, IN-KY	0.65%	-1.40%	16
21	Cedar Rapids, IA	0.65%	-2.46%	27
22	Dayton-Springfield, OH	0.63%	-1.79%	21
23	Lima, OH	0.57%	-1.91%	23
24	Eau Claire, WI	0.46%	1.20%	5
25	York, PA	0.37%	-1.38%	15
26	Harrisburg-Lebanon-Carlisle, PA	0.25%	-1.54%	17
27	Erie, PA	0.15%	-2.08%	24
28	Scranton-WIkes-Barre-Hazleton, PA	0.12%	-2.22%	25
	AVERAGE	0.10%	-2.37%	
29	Louisville, KY-IN	-0.00%	-2.69%	31
30	Saginaw-Bay City-Midland, MI	-0.06%	-3.06%	35
31	Jackson, MI	-0.10%	-3.59%	37
32	Reading, PA	-0.26%	-0.96%	10
33	Johnstown, PA	-0.37%	-6.43%	49
34	Canton-Massillon, OH	-0.56%	-3.72%	40
35	Altoona, PA	-0.57%	-2.96%	34
36	Akron, OH	-0.62%	-2.58%	30
37	South Bend, IN	-0.68%	-3.06%	36
38	Youngstown-Warren, OH	-0.94%	-4.55%	43
39	Toledo, OH	-0.95%	-2.74%	33
40	Allentown-Bethlehem-Easton, PA	-1.23%	-4.10%	41
41	Mansfield, OH	-1.81%	-2.51%	29
42	Waterloo-Cedar Falls, IA	-2.11%	-5.06%	44
43	Davenport-Moline-Rock Island, IA-IL	-2.34%	-5.27%	45
44	Springfield, IL	-2.40%	-5.86%	46
45	Flint, MI	-2.56%	-4.44%	42
46	Hamilton-Middletown, OH	-2.64%	-3.63%	39
47	Gary, IN	-2.83%	-6.11%	47
48	Lansing-East Lansing, MI	-3.03%	-2.74%	32
49	Kenosha, WI	-5.34%	-6.34%	48

Source: Bureau of Economic Analysis

In summary, the above historical analysis suggests that:

- The Kalamazoo-Battle Creek MSA has been one of the better economic performing areas in the Great Lake States. Although it does not rank with the region's fastest growing areas including the Grand Rapids-Muskegon-Holland MSA to the north, it has consistently ranked in the top fifteen.

- The area's manufacturing base has been a strong performer relative to the other Great Lakes' metropolitan areas. Although the region has suffered employment losses, especially in the early 1980s, the area has performed well relative to other mid-size metropolitan areas.

- The relatively poor performance of its nonmanufacturing sector has held back the Kalamazoo-Battle Creek MSA's growth compared to other metropolitan areas. Too many business and consumer services in the area may be limiting their markets to only Calhoun or Kalamazoo County, hence, foregoing the growth potential in establishing specialized services that could serve the entire metropolitan area or the West Michigan region.

Separating National and Local Factors of Economic Growth

A more revealing historical analysis is yielded by separating national and industrial factors from local factors of growth. Local economies are strongly influenced by changes in general national conditions, such as interest rates, changes in aggregated demand, and exchange rates. They are also influenced by changes in industry-specific conditions, such as growth in personal computer output or more extensive applications of plastics components in the automotive industry. National factors affect all metropolitan areas, while the industry-specific factors influence the health of local communities, according to the importance of the affected industry in the community. Much of the success of a local economy depends not upon local initiatives or economic development efforts, but on the industrial composition of its economic base, which may have developed due to an "historical accident". Autos in Detroit, furniture in Grand Rapids, cereal in Battle Creek, and pharmaceuticals in Kalamazoo all developed in these areas in large part to historical happenstance. They could have happened almost anywhere.

In fact, economic development can be compared to a card game in which there are two ways of winning. The first and easiest way is simply to be dealt a good economic hand. The problem is that good hands are random and come in "streaks". Detroit had a good hand in the 1950s and 1960s due to the auto industry, but came up empty in the 1980s. The same is true with Pittsburgh and steel. Grand Rapids still enjoys a good hand due to the office furniture industry. In Calhoun and Kalamazoo Counties, the cereal and pharmaceutical industries provided the aces in their industrial card holdings.

The second path to winning is to be better than the competition. An economic development effort that builds its area's strengths and assets and finds ways to resolve its weaknesses will have a greater probability of success than one that does not take such a strategic approach. Hence, a better measure of an area's competitiveness is taken by determining its relative performance to similar cities, *holding national and industry specified factors constant.* The analysis below attempts to control for these two factors by using a statistical technique called shift-share analysis.

Shift-share analysis offers a means to separate the following three components of an area's growth:

- **National Growth** - the portion of an area's growth resulting from the overall rate of national expansion.

- **Industrial Mix** - the portion of an area's growth that results from the national performance of the industries located in the region.

- **Competitive Growth** - the portion of area growth that results from area firms outperforming their national counterparts.

It is the last component that offers insight into an area's economic competitiveness.

In Table 10, we present a ranking of the above 49 mid-size metropolitan areas according to their *Competitive Growth* component of the shift-share analysis. As in the metropolitan rankings above, we examined two time periods, 1983 to 1993 and 1979 to 1990. In addition, we performed the shift-share analysis first for all sectors of the economy and then for only the manufacturing sector, in both cases controlling for the community size.

As shown in Table 10, when accounting for national and industrial factors, the relative position of the Kalamazoo-Battle Creek MSA to the other 48 mid-sized metropolitan areas remains relatively unchanged. It ranked 15th among the other metropolitan areas during the 1983 - 1993 period. The lack of change in the ranking suggests that the economic strength of the Kalamazoo-Battle Creek MSA lies not with the national growth of its key industries or to the general growth of the national economy. Instead, its relative performance depends upon the competitive strengths of the individual firms in its key industries.

Table 10 - The Competitive Performance of Mid-Size Metropolitan Areas in the Great Lakes States, 1983-1993 Ranking

	1983 - 1993		1979 - 1990	
	Total	Mfg	Total	Mfg
Lancaster, PA (MSA)	1	10	1	9
Grand Rapids-Muskegon-Holland, MI (MSA)	2	6	5	6
Fort Wayne, IN (MSA)	3	5	12	12
Green Bay, WI (MSA)	4	12	2	7
Appleton-Oshkosh-Neenah, WI (MSA)	5	7	8	10
Elkhart, Goshen, IN (MSA)	6	8	3	5
Bloomington-Normal, IL (MSA)	7	1	11	2
Madison, WI (MSA)	8	4	10	3
York, PA (MSA)	9	19	7	17
Ann Arbor, MI (PMSA)	10	16	9	16
Cedar Rapids, IA (MSA)	11	17	25	28
Harrisburg-Lebanon-Carlisle, PA (MSA)	12	24	6	18
Racine, WI (PMSA)	13	13	28	19
Rockford, IL (MSA)	14	15	16	13
Kalamazoo-Battle Creek, MI (MSA)	15	14	17	15
Altoona, PA (MSA)	16	36	35	34
Janesville-Beloit, WI (MSA)	17	23	18	14
Allentown-Bethlehem-Easton, PA (MSA)	18	39	14	43
Benton Harbor, MI (MSA)	19	9	34	26
Des Moines, IA (MSA)	20	25	19	27
Reading, PA (MSA)	21	26	4	8
Louisville, KY-IN (MSA)	22	27	22	32
Lima, OH (MSA)	23	20	27	21
South Bend, IN (MSA)	24	37	24	33
Eau Claire, WI (MSA)	25	28	13	4
Scranton-Wilkes-Barre-Hazleton, PA (MSA)	26	32	15	24
Springfield, IL (MSA)	27	45	20	47
Terre Haute, IN (MSA)	28	18	38	30
Hamilton-Middletown, OH (PMSA)	29	46	30	41
Dayton-Springfield, OH (MSA)	30	21	26	22
Erie, PA (MSA)	31	34	31	29
Evansville-Henderson, IN-KY (MSA)	32	22	33	20
Peoria-Pekin, IL (MSA)	33	11	43	39
Duluth-Superior, MN-WI (MSA)	34	3	46	11
Akron, OH (PMSA)	35	40	32	36
Canton-Massillon, OH (MSA)	36	29	37	35
Saginaw-Bay City-Midland, MI (MSA)	37	31	40	37
Youngstown-Warren, OH (MSA)	38	30	39	42
Lansing-East Lansing, MI (MSA)	39	49	23	31
Toledo, OH (MSA)	40	38	29	25
Champaign-Urbana, IL (MSA)	41	2	21	1
Gary, IN (PMSA)	42	43	42	40
Jackson, MI (MSA)	43	35	41	38
Davenport-Moline-Rock Island, IA-IL (MSA)	44	44	44	49
Mansfield, OH (MSA)	45	41	36	23
Johnstown, PA (MSA)	46	33	49	46
Waterloo-Cedar Falls, IA (MSA)	47	42	47	48
Kenosha, WI (PMSA)	48	48	48	45
Flint, MI (PMSA)	49	47	45	44

Source: W.E. Upjohn Institute

Employment Forecast for Calhoun and Kalamazoo Counties

Over the past three years, several major employers in Calhoun and Kalamazoo Counties have announced major layoffs. The General Motors Corporation still schedules to close its Kalamazoo plant by 1998, which will impact the plant's remaining 1,700 workers. Recently, the Kellogg Company announced that it will eliminate 800 positions at its production facilities in Calhoun County. The James River Corporation, Stryker Corporation, Interkal, Borgess Medical Center, and the Grand Trunk Railroad have also announced planned layoffs. In total, over 3,600 jobs could be eliminated in the Calhoun and Kalamazoo County area in the next three years as a result of these layoffs and closures.

Before these announcements were made, we had forecast that employment in Calhoun and Kalamazoo Counties would reach 260,000 by the year 2005, as area employment is forecasted to grow by a 1.3 percent average annual rate during the ten-year period ending in 2005. This rate is already down from the 2.4 percent average annual pace recorded in the 1983 to 1993 period. Continuous productivity growth and a slower national economy are primarily reasons for the expected slowdown in employment growth. Nationwide, output is expected to grow at a 2.2 percent pace during the ten-year period ending in 2005, compared to a 2.8 percent rate record of growth in the ten years ending in 1993.

For employment in the two-county area to reach the previously forecasted level of 260,000 jobs by 2005, an additional 8,000 jobs will have to generated in the area, in order to offset the full impact of the above layoffs. As shown in Table 11 and Chart 1, 3,600 jobs will have to be generated to make up for direct jobs losses associated with the layoff. An additional 4,400 jobs will have to created to erase the negative impact of the indirect or spin-off jobs expected to be lost, as well. If the above layoffs are factored into the forecast, employment is expected to grow by a more sluggish 1.0 percent annual rate in the next ten years.

Clearly, the area's standing relative to other mid-sized metropolitan areas in the Great Lakes States is threatened by these recent layoff announcements.

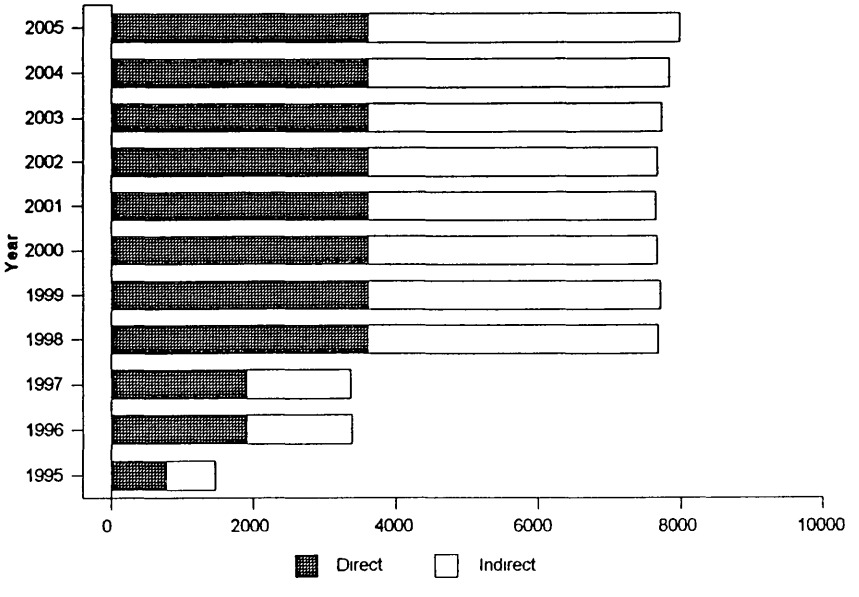
Summary of Economic Development Practices of the Great Lakes Better-Performing Metropolitan Areas

While a strong and positive competitive growth component indicates that an area's firms are gaining market share, it cannot be interpreted, directly, that the area enjoys a successful economic development effort. The area's economic development effort may be the reason; however, it is impossible to separate out the effects of other unrelated activities. Still, we review the economic development efforts of the top ten metropolitan areas to determine if common practices could be detected.

Table 11
Future Employment Impact of Announced Layoffs in Calhoun and Kalamazoo Counties

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
EMPLOYMENT											
Total Employment	1,466	3,384	3,366	7,679	7,708	7,659	7,639	7,662	7,726	7,833	7,974
Direct Job Loss (Layoffs)	779	1,903	1,903	3,603	3,603	3,603	3,603	3,603	3,603	3,603	3,603
Indirect Employment Losses	687	1,481	1,463	4,076	4,105	4,056	4,036	4,059	4,123	4,230	4,371
INDUSTRIAL BREAKDOWN											
Manufacturing	445	1,269	1,229	2,921	2,840	2,770	2,718	2,687	2,675	2,677	2,691
Nonmanufacturing	995	1,922	1,877	4,348	4,290	4,196	4,129	4,098	4,105	4,148	4,225
Construction	95	177	167	409	390	365	343	326	313	303	297
Transportation	146	185	182	273	269	265	263	261	262	265	268
Retail	175	405	399	1,073	1,069	1,052	1,042	1,037	1,044	1,058	1,079
Wholesale	36	78	75	275	269	264	260	259	259	262	268
Finance	45	84	79	247	234	217	203	193	186	183	184
Service	492	978	961	2,037	2,022	1,996	1,982	1,985	2,005	2,040	2,090
Government	26	194	260	411	578	693	792	876	947	1,008	1,058
COUNTY BREAKDOWN											
Calhoun County	463	2,084	2,086	2,076	2,071	2,074	2,085	2,108	2,139	2,180	2,223
Kalamazoo County	1,003	1,300	1,280	5,603	5,637	5,585	5,554	5,554	5,587	5,653	5,751

Chart 1 - Total Employment Impact of Announced Layoffs - Jobs Lost



Source: W.E. Upjohn Institute

The Grand Rapids Right Place program, the Green Bay Area ADVANCE program, and several other of the economic development organizations of the better-performing areas champion their established partnerships with area businesses and their success in consolidating the area's economic development efforts under one roof. The Grand Rapids Right Place Program has created manufacturing councils where business representatives in the same industries can focus on key shared issues. The Green Bay Area ADVANCE program, which covers Brown County, focuses on forming partnerships between business and government in the county and developing information links between individual businesses and governments to solve company specific problems.

Green Bay's economic development efforts also include the Advance Business Development Center, an incubator that currently houses 40 firms employing 150 workers. The Center offers no rental cost savings but offers shared services like copiers, reception, and fax machines.

Several organizations, including Green Bay Area ADVANCE, the Economic Development Company of Lancaster County, and the Greater Fort Wayne Chamber of Commerce, offer equity financing and loans to businesses.

The Appleton area Fox Cities Metro Marketing is the only two-county economic development program surveyed. It was launched in 1986 after the Fox Cities Chamber and several communities agreed to share resources to target desirable industries. The organization credits its success on the proper selection of target industries, accurately determining and sustaining the level of financial support available from each member community, and emphasizing the combined strength of the region in their marketing. One of its keys to success was the establishment of a "neutral" clearinghouse for initial company contact.

Several of the more successful metropolitan areas are homes to major universities, and their economic development organizations boast of the many business services they offer. The Washtenaw Development Council (Ann Arbor) lists the advantages of the Industrial Technology Institute, National Center for Manufacturing, and the many research and development resources at University of Michigan. The Greater Champaign-Urbana Economic Partnership promotes the business services and assistance at the University of Illinois. The Madison Economic Development program boasts of the business assistance available at the University of Wisconsin.

However, others, including the Grand Rapids Right Place Program, the Green Bay Area ADVANCE program, and the Development Company of Lancaster County, have fostered success without a major university within their borders.

In summary, several common themes emerged from our review of the economic development efforts of successful metropolitan areas.

- Most offer their business community a central agency that can meet their needs. Typical services include business information and small business assistance. Grand Rapids Right Place Program with its business roundtables offers the most direct economic development business linkages of those surveyed. However, with the exception of the Appleton Area Fox Cities Metro Marketing efforts, most of the organizations restricted their efforts within a county.

- Most depend on the state incentive programs and/or federally funded programs such as the Small Business Administration to provide financial incentive to attract new firms to relocate or local firms to expand.

- When available, the economic development organizations advertised the various programs at area universities.

Strengths and Weaknesses of Calhoun and Kalamazoo County

Nearly all of the economic development efforts reviewed had completed a strengths and weaknesses assessment for their region. Indeed, such an assessment is a vital step in the development of a strategic economic development plan. In order to identify the strengths and weaknesses of Calhoun and Kalamazoo Counties and to obtain an estimate on the level of area demand for a tradeport, we conducted an areawide survey of manufacturers. We mailed 620 packages containing two surveys to all manufacturers, regardless of size, in Calhoun and Kalamazoo Counties. One survey was addressed to chief executive officers and requested general information regarding their perceptions of the business environment in Calhoun and Kalamazoo Counties. The other more detailed survey probed into important logistic issues facing the companies. Copies of both surveys are included in Appendix A.

The surveys' completion rates were disappointing, with only 20 percent of the contacted manufacturers responding, but most of the area's major firms participated. The surveys' respondents employ approximately 46 percent of the two-county manufacturing workforce. In Calhoun County, the 16 percent of the contacted firms that responded employ 43.1 percent of the county's manufacturing workforce. In Kalamazoo County, the 22 percent of the surveyed firms that responded account for 72.8 percent of its manufacturing workforce.

General Strengths and Weaknesses Report

Highway access and higher education opportunities rank the highest among the two-county area's strengths, according to the region's chief executive officers (Table 12). On the other hand, indirect labor costs (workers' compensation, health care, unemployment insurance) and shortage of skilled workers were ranked as the major weaknesses in the two-county area.

In regards to transportation facilities, over 54.5 percent of the firms surveyed ranked inter-city truck service as a strength, while 47.4 percent ranked air passenger service as a strength. One third of the respondents marked air cargo as a plus in the area. On the negative side, 11.9 percent of the respondents marked air cargo as a weakness, and 20 percent indicated dissatisfaction with air passenger service in the area.

The respondents were also asked to list the region's top three economic weaknesses and strengths. Over 70 percent listed labor cost as one of the three major weaknesses of the area. For nearly 56 percent of the respondents labor availability made their list of the top three weaknesses of the area. Under 10 percent of the respondents listed air transportation, passenger and/or cargo, as one of the three primary weaknesses in the area.

Somewhat surprisingly, over 47 percent of the CEOs answering the survey put labor quality as one of the area's three highest strengths. As one commented, "The area's workers are great; there are just not enough of them." The greatest strength of the area is its location logistics according to surveyed CEOs. The area offers a great market or business location and has a good transportation system. Location ranked in the top three strengths for nearly 65 percent of the respondents, while transportation made the top three among 43 percent of the respondents. Education, especially higher education opportunities, was one of the top three strengths for 45 percent of the CEOs responding.

The Calhoun-Kalamazoo region looks very attractive when the area's perceived strengths shown in Tables 12 and 16 are compared to the top-rated site selection factors identified by firms, nationwide. According to the survey of corporative executives, published annually in *Area Development*, highway accessibility and labor costs head the list of key factors for executives, when they are exploring expansion locations. For the past five years, over 90 percent of the nation's CEOs cited highway access as a key location factor, while 92.6 percent of the CEOs responding to our local survey identified highway access as a strength. Seven of the national location factors listed in the top twenty-five are associated with labor availability and quality, as shown in Table 17. Labor, in general, made the top three list of the area's strengths for over 47 percent of the our survey's respondents.

Table 12 - Region's Strengths and Weaknesses:
Calhoun and Kalamazoo Counties

	Number Responding				Percent Responding		
	Strength	Weakness	Neither	Total	Strength	Weakness	Neither
LABOR							
Direct Labor	45	36	55	136	33.1	26.5	40.4
Workers Compensation	4	107	24	135	3.0	79.3	17.8
Health Insurance	10	89	37	136	7.4	65.4	27.2
Unemp Insurance	6	92	38	136	4.4	67.6	27.9
Skilled Labor	33	83	20	136	24.3	61.0	14.7
Entry-level Labor	39	60	35	134	29.1	44.8	26.1
TRANSPORTATION							
Air Passenger	64	27	44	135	47.4	20.0	32.6
Air Cargo	45	16	74	135	33.3	11.9	54.8
Truck Inter-City	73	6	55	134	54.5	4.5	41.0
Rail	30	9	94	133	22.6	6.8	70.7
Highway Access	126	1	9	136	92.6	0.7	6.6
EDUCATION							
K-12 School	59	33	43	135	43.7	24.4	31.9
School-Work Program	40	42	54	136	29.4	30.9	39.7
Community College	113	24	19	156	72.4	15.4	12.2
Four-Year College	111	22	23	156	71.2	14.1	14.7
Graduate School	85	7	44	136	62.5	5.1	32.4
OTHER							
Utility	37	17	72	126	29.4	13.5	57.1
Developable Land	66	23	45	134	49.3	17.2	33.6
Suppliers	75	10	51	136	55.1	7.4	37.5
Markets	85	12	37	134	63.4	9.0	27.6
Financing	66	8	62	136	48.5	5.9	45.6
Business Counseling	44	3	89	136	32.4	2.2	65.4
Econ Development Svc	68	7	60	135	50.4	5.2	44.4

Source: W.E. Upjohn Institute

Table 13 - Region's Strengths and Weaknesses:
Calhoun County

	Number Responding				Percent Responding		
	Strength	Weakness	Neither	Total	Strength	Weakness	Neither
LABOR							
Direct Labor	14	6	7	27	51.9	22.2	25.9
Workers Compensation	1	21	4	26	3.8	80.8	15.4
Health Insurance	3	13	11	27	11.1	48.1	40.7
Unemp Insurance	2	19	6	27	7.4	70.4	22.2
Skilled Labor	4	19	4	27	14.8	70.4	14.8
Entry-level Labor	8	11	7	26	30.8	42.3	26.9
TRANSPORTATION							
Air Passenger	6	9	12	27	22.2	33.3	44.4
Air Cargo	6	3	18	27	22.2	11.1	66.7
Truck Inter-City	12	0	15	27	44.4	0.0	55.6
Rail	6	3	18	27	22.2	11.1	66.7
Highway Access	26	0	1	27	96.3	0.0	3.7
EDUCATION							
K-12 School	8	8	11	27	29.6	29.6	40.7
School-Work Program	7	9	10	26	26.9	34.6	38.5
Community College	21	21	4	46	45.7	45.7	8.7
Four-Year College	19	19	8	46	41.3	41.3	17.4
Graduate School	13	3	11	27	48.1	11.1	40.7
OTHER							
Utility	5	5	16	26	19.2	19.2	61.5
Developable Land	22	1	4	27	81.5	3.7	14.8
Suppliers	16	1	10	27	59.3	3.7	37.0
Markets	13	1	12	26	50.0	3.8	46.2
Financing	12	1	14	27	44.4	3.7	51.9
Business Counseling	6	0	21	27	22.2	0.0	77.8
Econ Development Svc	15	0	12	27	55.6	0.0	44.4

Source: W.E. Upjohn Institute

Table 14 - Region's Strengths and Weakensses:
Kalamazoo County

	Number Responding				Percent Responding		
	Strength	Weakness	Neither	Total	Strength	Weakness	Neither
LABOR							
Direct Labor	31	30	48	109	28.4	27.5	44.0
Workers Compensation	3	86	20	109	2.8	78.9	18.3
Health Insurance	7	76	26	109	6.4	69.7	23.9
Unemp Insurance	4	73	32	109	3.7	67.0	29.4
Skilled Labor	29	64	16	109	26.6	58.7	14.7
Entry-level Labor	31	49	28	108	28.7	45.4	25.9
TRANSPORTATION							
Air Passenger	58	18	32	108	53.7	16.7	29.6
Air Cargo	39	13	56	108	36.1	12.0	51.9
Truck Inter-City	61	6	40	107	57.0	5.6	37.4
Rail	24	6	76	106	22.6	5.7	71.7
Highway Access	100	1	8	109	91.7	0.9	7.3
EDUCATION							
K-12 School	51	25	32	108	47.2	23.1	29.6
School-Work Program	33	33	44	110	30.0	30.0	40.0
Community College	92	3	15	110	83.6	2.7	13.6
Four-Year College	92	3	15	110	83.6	2.7	13.6
Graduate School	72	4	33	109	66.1	3.7	30.3
OTHER							
Utility	32	12	56	100	32.0	12.0	56.0
Developable Land	44	22	41	107	41.1	20.6	38.3
Suppliers	59	9	41	109	54.1	8.3	37.6
Markets	72	11	25	108	66.7	10.2	23.1
Financing	54	7	48	109	49.5	6.4	44.0
Business Counseling	38	3	68	109	34.9	2.8	62.4
Econ Development Svc	53	7	48	108	49.1	6.5	44.4

Source: W.E. Upjohn Institute

Table 15
The Top Three Weaknesses in the Region
(percent of total respondents for each category)

Weaknesses	first	second	third	top three
Labor Costs	19.5	28.3	23.6	71.4
Labor Availability	25.7	17.7	12.5	55.9
Taxes	17.7	14.4	13.9	46.0
Gov't Serv & Reg.	7.1	5.5	16.7	29.3
Education	5.3	3.0	2.3	10.6
Air Transportation	0.9	4.0	4.2	9.1
Other	23.8	23.1	26.8	73.7

Source: W.E. Upjohn Institute

Table 16
The Area's Top Three Strengths
(percent of total responses by category)

Factor	first	second	third	top three
Location	29.9	20.9	14.1	64.9
Labor	19.1	15.5	13.1	47.7
Education	16.5	13.6	15.2	45.3
Transportation	6.1	25.5	11.1	42.7
Quality of Life	8.7	9.1	17.2	35.0
OTHER	20.0	15.4	29.2	64.6

Source: W.E. Upjohn Institute

Table 17
Key Site-Selection Factors - National Survey of CEOs
1990-1994

Ranking	Factor	(percent response)					
		1990	1991	1992	1993	1994	Average
1	Highway accessibility	92.3	95.5	94.1	87.1	96.8	93.2
2	Labor costs	92.1	95.3	90.3	90.3	93.5	92.3
3	Energy availability and costs	88.1	89.4	83.7	83.2	93.4	87.6
4	Availability of skilled labor	87.1	80.9	88.6	88.8	91.9	87.5
5	Occupancy or construction costs	88.5	87.5	83.6	85.5	87.3	86.5
6	Low crime rate	83.3	84.7	88.4	86.6	87.2	86.0
7	State and local incentives	88.7	81.4	86.8	83.0	89.3	85.8
8	Tax exemptions	85.8	78.8	88.4	83.0	87.9	84.8
9	Environmental regulations	82.9	78.6	77.9	77.4	88.2	81.0
10	Availability of telecommunications services	76.7	78.4	81.5	80.7	87.0	80.9
11	Health facilities	78.6	78.4	84.1	81.1	81.4	80.7
12	Availability of land	82.3	80.0	81.9	72.5	82.9	79.9
13	Ratings of public schools	79.6	75.0	84.2	80.5	76.8	79.2
14	Availability of long-term financing	75.4	74.6	84.0	88.9	71.6	78.9
15	Cost of land	84.0	76.5	79.7	70.2	80.7	78.2
16	Low union profile	78.7	74.3	80.9	75.9	80.1	78.0
17	Housing costs	76.5	74.1	81.7	81.0	76.3	77.9
18	Nearness to major markets	74.9	68.6	79.0	76.9	79.5	75.8
19	Housing availability	76.9	70.6	78.5	76.8	75.0	75.6
20	Right-to-work state	71.3	66.7	72.7	70.6	72.3	70.7
21	Nearness to suppliers	65.1	63.0	66.3	58.8	68.9	64.4
22	Raw materials availability	64.1	59.2	59.9	60.1	66.3	61.9
23	Accessilbility to major airport	55.5	57.2	65.5	57.4	71.7	61.5
24	Availability of unskilled labor	73.6	61.2	55.8	54.2	62.0	61.4
25	Recreational opportunities	66.6	60.5	58.3	60.0	60.4	61.2

Source: Area Development Magazine

Although helpful in identifying an area's strengths and weaknesses, subjective rankings of area resources are not very useful to economic developers when trying to allocate resources among competing activities. For area economic developers, it would be more helpful to know what economic development policies have the most effect on expansion decisions. For example, would lowering taxes or transportation costs have the greatest impact?

In the survey, we asked CEOs to estimate how the probability of their company expanding in the area would change if there were a 5 percent decline in wages, employee benefit costs, recruitment costs, training costs, taxes or transportation costs (each one taken separately). For most respondents, a 5 percent change in any of these factors would not change the probability of their companies expanding in the area. However, on average and controlling for relative employment size, a 1 percent decline in employee benefit costs would increase the probability of expansion by 0.49 percent, as shown in Table 18. Lowering area taxes would apparently have the greatest chance of increasing the likelihood of a business expansion in the area.

Table 18
The Impact of Cost Reductions on Expansion Probability

A 1 percent decline in each of these costs:	Would increase the probability of expanding in the area by: (percent)
Wages	0.42
Employee Benefit Costs	0.49
Recruitment Costs	0.18
Training Costs for New and Existing Workers	0.29
Taxes	0.51
Transportation	0.31

Responses weighted by employment size of the responding firms.
Source: W.E. Upjohn Institute

The establishment of an international tradeport would lower transportation costs for area firms by offering more efficient means to ship and receive products. However, the cost savings offered by a tradeport to a typical firm would be small because surface transportation, i.e. truck and rail, carry the lion's share of freight traffic. If the tradeport lowered all transportation costs facing an average firm by 1 percent, then it would increase the probability of firms expanding by 0.31 percent. While positive, this finding suggests that a tradeport would have little impact on an area manufacturer's expansion decisions.

Section III
Tradeport and Regional Growth Prospects

Introduction

A tradeport as described previously would provide a fully-integrated transportation, distribution, and manufacturing complex where manufacturers could operate in a just-in-time environment. Components and supplies could be flown in directly to the plant and unloaded in a foreign trade zone environment. Intermodal transfer facilities would be available to facilitate the rapid transfer of containers from incoming airplanes to trucks or rail and vice versa. Also, assembly operations could be performed in a foreign trade zone environment and shipped to customers in the same day. In short, the facility would be built for manufacturers requiring state-of-the-art logistics services. Unlike major airports, manufacturing needs would come first, followed by warehousing. Passenger travel would be restricted to corporate airplanes and charter services.

Many of the key ingredients of a tradeport are already in place at the W.K. Kellogg Regional Airport including:

- a 10,000 foot runway (although substantial improvements are required to existing taxi lanes and an apron),
- rail transportation,
- foreign trade zone with custom services,
- available industrial land.

In this section, we first review current and future trends in the transportation of goods, focusing on air cargo. Second, we examine the track record of existing tradeports and air cargo facilities in attracting manufacturing activity. Finally, we offer our assessment of the air cargo demand and supply conditions in Calhoun and Kalamazoo Counties. The economic factors that determine the viability of a tradeport, which are examined, include:

- current demand for air cargo, both scheduled and on-demand, by businesses in the region;
- current delivery of air cargo services and customers' satisfaction with the present service;
- future demand for air cargo by existing firms.

Current Trends in the Shipment of Goods

Technology advances in logistic controls are changing the face of freight operations. Express trucking is cutting into the markets traditionally reserved for air, while rail is stripping away business from long-haul trucking operations. In addition, the transportation industry is becoming more integrated. The number of intermodal carriers is expanding, and freight services are improving. Seemingly incompatible modes of transportation, such as ocean vessels and air, are being linked daily.

Worldwide, air cargo growth is expected to grow an average of 6.5 to 7.6 percent per year, while the world economy pushes ahead at 3.3 percent through 2013, according to several of the leading air cargo transportation forecasters. The Boeing Commercial Airplane Group and the International Civil Aviation Organization forecast air cargo to grow at a 6.5 percent annual rate in the 1990s, down from its 7.3 percent annual rate in the 1980s. Megaglobal Primary Research forecasts a 7.6 percent annual rate for international air cargo over the next decade.

Domestically, air cargo is expected to grow at a rate between 3.1 and 5.3 percent in the coming years. Reebie Associates is the most conservative of the group, forecasting domestic air cargo to grow at a 3.1 percent annual rate until the year 2002. Megaglobal Primary Research forecasts domestic air cargo to grow at a 4.7 percent annual rate. Finally, the Boeing Group forecasts a 5.3 percent annual rate of growth until 2013.

The above forecasts indicate that air cargo usage will only increase in the coming years. In addition, several major trends **within** the air cargo industry are expected to occur during that time.

- ***Express air cargo and designated freight carriers will continue to grab market share from "in-the-belly" passenger carriers.*** Federal Express and UPS, for example, already control 50 percent of the domestic market. The growing demand for logistic control, time-specific delivery, and lean inventory controls works is in the favor of designated and express air cargo carriers. Moreover, efficiency demands are forcing passenger carriers to modify their fleet to smaller planes that have less cargo capacity.

  The success of designated air freight in the United States has raised customer expectations for air freight service worldwide. Boeing expects express operators to increase their world market share of cargo tonnage from about 4 percent of the world market to 30 percent by 2013.

- ***The air cargo industry is highly volatile and competitive.*** Capacity can increase quickly through plane leasing. The smaller companies are financially unstable with thin profit margins and can move their hub facilities quickly from one airport to another. While this is not true of the larger, more established carriers such as Federal Express, UPS and Burlington Express, the competition for their hub facilities is intense.

- ***International cargo links between North America and other developed regions will only grow stronger in the coming years.*** Boeing Commercial Airplanes Group forecasts air cargo volumes between North America and South America and between Asia to grow at a 7.8 percent average annual rate out to 2013. Air cargo volumes between North America and Europe are expected to increase at a slower 6.8 percent annual rate. These forecast rates are well above the output growth estimates for these regions and are substantially above the current growth rate of air cargo.

- ***Boeing forecasts that large planes (747s, 767s, DC-10s and MD-11s) will make up a larger share of the nation's cargo fleet in the coming years.*** Today, these jumbo carriers make up 17.4 percent of the fleet. By 2013, jumbo carriers are forecasted to account for 35.1 percent of the world freighter fleet, according to Boeing.

- ***The use of intermodal services is expected to only grow in the coming years.*** Domestic Road Feeder Services (RFS) frequencies jumped from 4,000 frequencies per week in 1985 to 15,800 frequencies per week by 1993. Ship-to-Air links, especially from the West Coast ports, are also growing. The linkage is particularly crucial when an ocean vessel has been delayed due to a storm or loading difficulties. When the delayed ship finally arrives in port, the cargo is redirected from rail or truck to air in order to make up for lost time.

- ***Production and marketing strategies will promote further use of air cargo in the future.*** Just-in-time inventory control is pushing more and more cargo on to airplanes, but it is primarily restricted to emergency situations when the planned freight shipments are delayed or when customers require immediate service. Second, companies are finding that providing faster services is simply better marketing. Quick delivery leads to more final sales.

Trends Among Other Transportation Modes

All modes of freight transportation are improving their efficiency. For example, rail intermodal traffic has grown from 3.1 million containers in 1980 to 6.7 million in 1992, due to the introduction in 1984 of specialized rail cars that can carry containers stacked two high. Approximately 130 double-stacked trains depart the West Coast weekly with double stack cars accounting for 40 percent of total intermodal capacity and 80 percent of the containerized freight. On the back haul, the trains carry exports and domestic traffic.

Trucks still carry 42 percent and earn 78.7 percent of total revenue of all the United States' freight. Although container trains have made in-roads on long-distance hauls, trucks are being used more heavily for short-distance hauls and have become a key link as shippers streamline manufacturing processes. In addition, just-in-time delivery schedules have created demand for shorter, more reliable truck supply routes.

Users of Air Cargo

Use of air cargo varies considerably across industries. According to Reebie Associates' estimates, the electronic components and accessories industry ship the most tonnage by air domestically. As shown in Table 19, this industry, which includes semiconductors, shipped by air over 110 thousand tons of cargo in the U.S. in 1992. The industry's domestic air volumes are expected to reach over 262,000 tons in 2002. Motor vehicles is second, in terms of forecasted air cargo volume in 2002, followed by preserved fruits and vegetables, and computers.

Table 19
Top Twenty Air Cargo Industries in 2002
(tons shipped by air)

Industry	1992	2002	Average Annual Percent Change 1992-2002
Electronic components and accessories	110,239	262,574	9.1%
Motor vehicles and equipment	205,208	257,929	2.3%
Preserved fruits & vegetables	175,379	189,037	0.8%
Computers & office equipment	107,178	177,860	5.2%
Misc. publishing	104,017	139,787	3.0%
Construction and related machinery	76,937	107,170	3.4%
Communication equipment	65,172	90,828	3.4%
Misc. plastics products, NEC	64,470	87,871	3.1%
Aircraft and parts	59,150	84,795	3.7%
Beverages	58,563	68,030	1.5%
Electric distribution equipment	43,067	56,852	2.8%
Soap, cleaners and toilet goods	43,755	53,985	2.1%
Special industry machinery	34,585	53,789	4.5%
Measuring and controlling products	40,325	51,846	2.5%
TV & video household	31,006	51,186	5.1%
Printing trade services	37,705	50,795	3.0%
Metalworking machinery	33,477	48,410	3.8%
Misc. fabricated metal & metal serv. NEC	38,062	46,064	1.9%
General industrial machinery	45,119	45,119	0.0%
Womens or childrens clothing	41,690	43,667	0.5%
TOTAL	1,415,104	1,967,594	3.4%
PERCENT OF ALL INDUSTRIES	67.7%	69.6%	
ALL INDUSTRIES	2,090,039	2,825,590	3.1%

Source: Reebie Associates

Internationally, importers of electronic components and accessories are the largest users of air (by dollar value), followed by transportation equipment including auto (Table 20). On the export side, the electronic integrated circuits industry is the largest air cargo exporter, followed by parts for aircraft and medical instruments (Table 21).

Not surprisingly, a strong correlation exists between the value per kilogram and the volume of shipments by air. In 1993, approximately 51 percent of total air imports and 45 percent of air exports are composed of products valued at greater than 15 dollars per kilogram, roughly 2.2 pounds, according to the Boeing Commercial Airplane Group.

Table 20
Value of U.S. Imports
by Major Commodity Group in 1994
Ranked by Value of Air Import Shipments

Rank	Commodity Description	Customs Value	Air Value	Imports Air/Total
1	Electronic components and accessories	$161,974,481,265	$53,209,225,758	32.9%
2	Motor vehicles (passenger cars and trucks)	249,779,247,112	11,031,923,765	4.4%
3	Misc. manufacturing	23,660,432,505	9,861,853,281	41.7%
4	Opthamalic and photographic equipment	19,546,506,939	8,919,523,028	45.6%
5	Industrial and other chemicals	13,423,840,554	4,199,658,500	31.3%
6	Footwear, leather and leather products	22,344,154,475	2,595,023,734	11.6%
7	Aircraft and parts	7,085,171,256	1,925,927,330	27.2%
8	Drugs	2,782,590,416	1,857,251,418	66.7%
9	Scientific and controlling equipment	2,429,521,833	1,810,452,632	74.5%
10	Rubber and misc. plastics products	15,241,904,806	784,701,395	5.1%
11	Other fabricated metal products	4,833,645,137	761,148,818	15.7%
12	Furniture and fixtures	8,938,714,777	617,257,572	6.9%
13	Newspapers and periodicals	1,899,265,725	415,410,452	21.9%
14	Glass and glass products	2,180,072,372	314,077,984	14.4%
15	Agricultural fertilizer and chemicals	816,873,809	102,543,207	12.6%
16	Paper and allied products, except containers	10,883,537,740	99,598,246	0.9%
17	Cleaning and toilet preparations	489,220,543	15,991,679	3.3%
18	Other transportation equipment	510,212,449	5,678,797	1.1%

Source: U.S. Department of Commerce

TABLE 21

Value of U.S. Exports Shipments by Major Commodity Group in 1994

Ranked by Value of Air Export Shipments

Rank	Commodity Group	F.A.S. Export Total	F.A.S. Export Air	Export Air/Total
1	Electronic integrated circuits and microassemblies	16,431,000,000	14,331,000,000	87.2%
2	Parts for balloons, aircraft, and spacecraft	9,581,000,000	7,336,000,000	76.6%
3	Medical, surgical, dental or veterinary instruments	5,322,000,000	4,158,000,000	78.1%
4	Transmission apparatus for radio, phone or television, etc.	3,981,000,000	3,160,000,000	79.4%
5	Electric apparatus for lines-television, phones, etc.	4,464,000,000	3,153,000,000	70.6%
6	Records, tapes and other recorded media	3,742,000,000	2,855,000,000	76.3%
7	Oscilloscopes and spectrum analyzers	2,705,000,000	2,307,000,000	85.3%
8	Parts for television, radio, and radar apparatus	3,287,000,000	2,180,000,000	66.3%
9	Instruments for physical/chemical analysis, etc.	2,087,000,000	1,821,000,000	87.3%
10	Semiconducter devices	1,667,000,000	1,337,000,000	80.2%
11	Medicaments, mixed or not, in measured doses	1,887,000,000	1,263,000,000	66.9%
12	Human blood, animal blood, antisea, vaccines, etc.	1,462,000,000	1,185,000,000	81.1%
13	Electrical apparatus for switches	3,021,000,000	1,181,000,000	39.1%
14	Orthopedic appliances; artificial body parts; hearingsaids, etc.	1,282,000,000	1,170,000,000	91.3%
15	Composite diagnostic/lab reagents excluding pharmaceutical	1,233,000,000	1,057,000,000	85.7%
16	Diection finding compasses and navigational instruments	1,206,000,000	1,051,000,000	87.1%
17	Electrical machines with industrial functions	1,312,000,000	990,000,000	75.5%
18	Prepared unrecorded media (no film) for sound	1,736,000,000	887,000,000	51.1%
19	Parts and accessories for motor vehicles	21,163,000,000	873,000,000	4.1%
20	Machines for balancing mech parts and checking instruments	1,124,000,000	758,000,000	67.4%
21	X-ray apparatus including tubes, panels, screens, etc.	987,000,000	728,000,000	73.8%
22	Printed circuits	1,377,000,000	700,000,000	50.8%
23	Electrical parts of machinery	919,000,000	672,000,000	73.1%
24	Powered aircraft, spacecraft and launch vehicles	19,268,000,000	666,000,000	3.5%
25	Automatic regulating or control instruments	1,988,000,000	594,000,000	29.9%
26	Antibiotics	11,607,000,000	541,000,000	4.7%
27	Optical fibers/fiber bundles; contact lenses; spectale lenses, etc.	646,000,000	541,000,000	83.7%
28	Electric transformers, static converters and inductors	1,750,000,000	513,000,000	29.3%
29	Books, brochures and similar printed matter	1,833,000,000	504,000,000	27.5%
30	Surveying equipment and parts/accessories	682,000,000	497,000,000	72.9%

Source: U.S. Department of Commerce

Experience of Existing Tradeports and Cargo Airports

Several existing air cargo facilities are somewhat successful; however, most are struggling. In our survey of existing air cargo facilities, we found that:

- The successful air cargo facilities:
  - operate major hubs for cargo designated carriers, such as Toledo (Burlington Express), Memphis (Federal Express), Rickenbacker (Federal Express - Flying Tiger);
  - house maintenance operations for major passenger carriers (Alliance); and/or
  - are centrally located such as Rickenbacker (Columbus, Ohio, in the heart of the Midwest) or Alliance (Fort Worth in the center of Texas) .
- Air cargo does not pull its weight in terms of airport revenue;
- Several air cargo airports and tradeports, such as Alliance and Rickenbacker, have been successful in becoming distribution centers, but none have been successful in attracting manufacturing activities.

The following is a brief survey of several of the major tradeports in the country and regional cargo airports.

Rickenbacker International Airport: Columbus, Ohio

The Rickenbacker International Airport is one of the most successful cargo-designated airports in the nation. Nine air cargo carriers average at least 65 arrivals per week. In 1994, the airport handled over 475 million pounds of air cargo, up 27.6 percent over the previous year.

Nearly 5,000 individuals work at the airport. The primary employer is Spiegel/Limited, which uses the airport to import apparel and clothing from the Far East. Spiegel/Limited employs just over 2,000 workers. Sun T.V. also has a major warehouse/distribution center at the port, employing 650 individuals. The remaining workers are employed by the nine air carriers and smaller warehousing/distribution centers.

According to airport officials, manufacturers have shown little interest in locating at the airport, however. This has been true, even though the State of Ohio offers a special tax incentive program for manufacturers at the airport. While manufacturers have expressed interest in the incentive program, their limited use of the airport facility have

made them ineligible for the incentive. Airport officials revealed that Honda's Maryville plant, which is no more than 40 miles from the airport, does not use it.

The airport offers a 274,000 square foot air cargo facility built in 1986 with federal and state funding assistance for Flying Tiger. Presently, the facility hosts an impressive number of cargo carriers including to Federal Express (formerly Flying Tigers), Polar Air, Evergreen International, Martinair Holland, Northwest Cargo, Korean Airlines, British Airways and United Parcel Service.

According to airport officials, total capital investment (1981-1994) reached $295 million. Still, the airport has not broken even, nor is it expected to do so in the near future. Indeed, the county subsidizes airport operations by $3.5 to $4.0 million a year.

Alliance International Tradeport: Fort Worth, Texas

The Alliance International Tradeport is one of the best known tradeports in the nation. As of January 1995, 2,700 individuals work at the tradeport. American Airlines Maintenance Base and Engineering Center employs approximately 44 percent of the facility's workers. Another 34 percent are employed in distributing and warehousing activities. Government, the Santa Fe railroad, and several retail stores account for the rest. At this time, there are no manufacturing activities at the airport, although Nokia Mobile Phones Incorporated, a major telephone manufacturer, announced it will build a 282,000 square foot manufacturing facility next to its existing warehouse.

The airport continues to grow with Federal Express announcing that it will build a regional hub there, employing 600 workers by mid-1997.

The price tag for this growth is high, however. To attract the American Airlines' maintenance operation, for example, the Alliance Airport Authority issued up to $800 million in tax exempt special facility revenue bonds. The City of Fort Worth financed $10.7 million in street, utility, and runway improvements, and the state approved a 15-year abatement of personal and real property taxes. Jet fuel surcharges were waived, and airline inventories were exempted from taxation.

North Carolina Global Transpark

The State of North Carolina is sponsoring the development of the Global Transpark, which will be served by two 13,000 foot runways. The Transpark will offer immediate access to two rail lines and an interstate highway and will occupy 15,300 acres of land. Moreover, plans call for an impressive network of a computer-controlled rail transfer system to transport cargo directly from manufacturing centers to transportation hubs.

The project is still very much on the drawing board, however. In March, 1995, the *Wall Street Journal* reported that only an air cargo maintenance facility has signed on the concept. As of July, no construction has occurred to upgrade the rural Kingston Airport to support commercial cargo traffic. Moreover, the tradeport marketing efforts have been expanded beyond focusing solely on high-tech, just-in-time manufacturing activities to now including agricultural and military activities.

Pease International Tradeport, New Hampshire

The State of New Hampshire is sponsoring the Pease International Tradeport which offers a 11,300 foot runway and occupies 4,200 acres of land of which 800 acres are zoned for industrial and commercial uses. The tradeport also allows ready access to an interstate highway, rail transportation, and a deep-water port. Currently, two manufacturing companies have located at the tradeport, but according to the tradeport's marketing staff, neither are using the air cargo facilities. The larger of the two is the Celltech Corporation's U.S. headquarters which employs 38 individuals. The second is the Red Hook Ale Brewery.

Toledo Express Airport

In 1990, Burlington Air Express moved its Cargo Hub from Fort Wayne to the Toledo Airport which is operated by the Toledo-Lucas County Port Authority. Every night between 12 a.m. and 4 a.m., 32 wide-body cargo jets from as far as Singapore land and take off at the facility. The hub employs approximately 1,000 workers, many of whom work part-time. Last year, 804 million pounds of cargo were handled at the facility.

To retain Burlington Air Express, the Toledo-Lucas County Port Authority continues to make substantial improvements to the facility and are in the midst of a $28 million residential relocation effort, as required in its noise abatement plan. The Port Authority issued a $100 million revenue bond for the construction of Burlington's Hub facility. The airport is running at a $200,000 annual deficit, according to Mark D.VanLoh, the airport's director. The deficit would be much greater if the airport did not also handle commercial passenger service.

The airport also offers approximately 200 acres of fully-serviced land for industrial and commercial development, a portion of which is designated as a foreign trade zone. The area also holds the advantage of being located next to the Burlington Air Express Hub facility. Nevertheless, according to the airport director, the available acreage has stimulated little interest in the business community, and at present, no manufacturing facilities are located there.

Kent County International Airport

Currently, six cargo carriers operate out of the Kent County Airport. All are presently running below freight capacity. Federal Express's national spoke connector is running at 39 percent capacity, while its regional feeders are working at nearly 70 percent. Emery and Airborne are both below 30 percent capacity utilization. Finally, Roadway Global and the U.S. Mail are operating below 15 percent capacity. The airport currently has 53,380 square feet of terminal and office space for cargo, and air cargo operations employ approximately 150 workers.

Despite these low operating levels, the airport is undergoing a major expansion in its air cargo system. Based on a forecast developed by HNTB for air cargo shipments from a catchment area, that includes Battle Creek, Kalamazoo, Muskegon and Lansing, the airport plans to increase its cargo building space by 55.7 percent to 109,000 square feet by 2000 and by another 38.5 percent by 2005. The addition is part of a larger $110 million expansion plan as shown in Table 22.

Table 22
Expansion Plans for the Kent County International Airport

Improvement	Cost	Completion date
Runway Extension	$4.3 million	Completed
Parking and Roadway	5.5 million	Late 1995
Crosswind Runway	60.0 million	1998
Cargo Terminal	25.0 million	Spring 1999
Passenger Terminal	15.0 million	Spring 1999

Source: Kent County International Airport

While the airport officials hope to serve a growing demand for air cargo, they have not witnessed any interest by area manufacturers to build facilities at the airport even though land is available. Although the airport is centered in a rapidly growing industrial and commercial area, little or none of the growth can be attributed to the airport, according to airport officials.

Willow Run Airport

The Willow Run Airport is already a major cargo airport for the state's auto industry. Eleven air cargo carriers currently operate out of the airport; however, the airport recently lost the hub operation for American International Airways (AIA) to Terre Haute, Indiana. Before the departure of AIA, the airport handled just over 800 million pounds of cargo annually and had the largest number of on-demand charter aircraft in the nation.

The potential for Willow Run as a cargo airport is very promising due to its immediate proximity to the heart of the state's auto assembly industry. However, the airport is facing serious infrastructure constraints that are limiting its potential. The lack of a 10,000 foot runway is the major problem of the facility. As reported by JBF Associates, consultants hired by the airport authority to assess the current and potential development of the facility:

> "Tenants say they cannot operate efficiently and are competitively handicapped.... They are not providing cost effective and reliable service to their current clients and losing business to South America, Europe and Asia. Seven years ago, the lift out of Willow Run was nearly a million pounds a night. Now it is half of that." (*Phase One Report: Marketing Analysis of the Willow Run International Tradeport* page 20)

In addition, many of the existing cargo and airport-related structures are in very poor condition.

The Willow Run Airport Area Economic Opportunity Center has submitted a plan not only to extend the facility's principal runway to 10,300 feet, but also to build a 4,400 acre industrial and technology park alongside the 2,300 acre airport. The current estimates of public expenditures for the entire project has now reached $185 million including an estimated $6.2 million to lengthen the runway. Industrial revenue bonding for additional private investment will be offered when available.

In an interview with Tom Fegan, Co-Chairman of the Willow Run International Tradeport Task Force Steering Committee, Mr. Fegan made the following two points. First, the major user of the tradeport will remain the auto industry. Few expect the auto companies to relocate any of their production facilities to Willow Run if the tradeport is built, however. The issue is whether the airport can recapture and keep the cargo business that it currently has or continues to lose it to surrounding airports. Second, in discussing the type of tenants that the steering committee foresees locating in airport's proposed research and office park, Mr. Fegan did not see the proximity of the airport as the major selling point. Instead, he is hopeful that Willow Run's location to the auto industry will attract firms into the park.

Summary

In our interviews with airport officials at the above mentioned facilities, several common themes were repeated:

- ***Air cargo demand is based upon the industrial mix, size, and market focus of a region's industrial base.***

- ***Air freight is a highly competitive industry and very mobile.*** Air carriers switch hubs and change routes without notice, potentially leaving their former host communities with excess capacity.

- ***Air cargo operations are seldom self-supporting.*** The principle source of revenue for airports are landing fees, terminal rentals and auto parking lot fees. Cargo operations do not generate either of the last two sources of revenue.

- ***Air cargo airports have not been successful in attracting manufacturing activities that are directly tied to the airport.*** Airport officials have reported little interest from manufacturers in locating near air cargo airports. Moreover, manufacturers that have been located near a cargo airport have done so due to factors, i.e. land availability, other than the proximity to airport services.

Industry Demand for Air Cargo in Southwest Michigan

To obtain an understanding of the industrial demand for air cargo in southwest Michigan, we completed the following tasks:

- Surveyed firms' logistic and purchasing departments to determine local business transportation characteristics and needs;

- Held focus group sessions with manufacturers in the cities of Battle Creek, Kalamazoo, and Marshall;

- Prepared estimates of potential air cargo demand based upon the area industrial composition and size.

Results of the Tradeport Demand Survey

The Tradeport Demand Survey (see Appendix A) asked regional manufacturing firms to provide detailed information on their logistical operations. In short, the survey's findings indicate that:

- Firms predominantly use trucks for both shipping their final product and receiving supplies and inputs.

- One of the reasons for the dominance of trucking is that area manufacturers have located near their suppliers and markets.

- Firms do not use air cargo more often because it is expensive and not required, except in emergencies or when customers demand it.

- Air cargo services are available to area firms when needed. The survey respondents identified 30 different air cargo carriers and freight forwarders that serve the Calhoun-Kalamazoo region.

- Over 65 percent of the firms surveyed see no change in the next ten years in their use of air cargo to ship their product. Over 20 percent see up to a 10 percent increase in their use of air cargo, while 10 percent predict an increase of up to 20 percent.

- Nearly 65 percent of the firms surveyed see no change in their use of air cargo for the shipment of supplies over the next ten years. Nearly 26 percent predict at most a 10 percent increase, while nearly 8 percent are pushing to **reduce** their use of air cargo in the next ten years.

- Among the services that would be offered by a tradeport, 24 percent would find a railroad container loading and unloading facility highly beneficial. Approximately 14 percent would see a manufacturing location with immediate access by plane the highest benefit.

Currently, approximately 70 percent of all shipments leave the Calhoun-Kalamazoo region by truck, as shown in Table 23. Rail and the combination of truck and rail account for another 11 percent. Air cargo accounts for less than 8 percent, while expedient services such as UPS and Federal Express (that can also use air) account for the remainder. Less than 1 percent of the region's shipments fly out of the two airports in Calhoun and Kalamazoo Counties. The predominance of trucks is also evident in the shipment of supplies to area manufacturers (Table 24).

Table 23
When shipping your products, what percent, according to weight and value is shipped through the following modes and facilities?
(responses weighted by employment size of responding firms)

	Percent by Weight	Percent by Value
Truck Only	70.8	66.5
Rail Only	5.4	5.3
Truck & Rail	5.2	5.1
Air: Kalamazoo-Battle Creek	0.8	0.9
Air: Grand Rapids	0.3	0.3
Air: Chicago and/or Detroit	4.1	5.8
Air: Other	2.2	2.7
Other	11.2	13.3

Source: W.E. Upjohn Institute

Table 24
What percent of your supplies are shipped to you by the following modes of transportation and facilites?
(responses weighted by employment size of responding firms)

	Percent by Weight	Percent by Value
Truck Only	69.8	65.7
Rail Only	16.2	13.6
Truck & Rail	5.5	5.4
Air: Kalamazoo-Battle Creek	0.4	0.4
Air: Grand Rapids	0.3	0.5
Air: Chicago and/or Detroit	1.3	4.8
Air: Other	2.9	3.8
Other	4.1	6.6

Source: W.E. Upjohn Institute

Trucks' large share of the freight market is due to their lower relative costs and to area manufacturers being located near their customers and suppliers. Many of the region's manufacturers selected the Calhoun-Kalamazoo region for its market location which minimized transportation costs. As shown in Tables 25 and 26, 34 percent of the region's manufacturers' customers and over 50 percent of their suppliers are located within 150 miles.

Table 25
What percent of your customers by dollar value of sales are in the following areas?
(responses weighted by employment size of responding firms)

	Percent Weighted
Within 150 miles	34.0
Between 150-500 miles	23.0
Between 501-1000 miles	20.1
Canada	14.9
Mexico	2.0
Europe	1.6
Japan	4.2
Other	0.4

Source: W.E. Upjohn Institute

Table 26
What percent of your suppliers by dollar value of purchases are in the following areas?
(responses weighted by employment size of responding firms)

	Percent Weighted
Within 150 miles	52.6
Between 150-500 miles	18.3
Between 501-1000 miles	16.6
Canada	7.0
Mexico	0.3
Europe	0.8
Japan	4.1
Other	0.2

Source: W.E. Upjohn Institute

Approximately 44 percent of the surveyed firms cited that their lack of use of air freight was because they didn't need it (Table 27). A majority of the respondents, 52.6 percent, indicated that cost was the limiting factor in their use of air for shipping their product. Cost was cited as a principal reason for not using air in the shipment of supplies as well (Table 28). Although area manufacturers are not completely satisfied with the quality of trucking services in the area as indicated in the findings in the focus groups, it is still far less expensive than air.

Table 27
My company does not use air freight to ship our products more often because of:

	Percent Respondents
The relative cost of air freight	52.6
The lack of need for air freight	43.9
The lack of local air freight service	1.8
Limited information on sales potential to foreign markets	1.8

Source: W.E. Upjohn Institute

Table 28
My company does not use air freight for supply shipments more often because of:

	Percent Respondents
The relative cost of air freight	57.5
The lack of need for air freight	39.8
The lack of local air freight service	1.8
Limited information on sales potential to foreign markets	0.9

Source: W.E. Upjohn Institute

Again, turning to Table 27, it is important to note that less than 2 percent of the firms responding indicated that the lack of service was the reason they didn't use air cargo more often. In fact, as shown in Table 29, area manufacturers are using 30 different air freight carriers and forwarders.

Table 29
Names of Air Freight Carriers or Forwarders Being Used in Calhoun and Kalamazoo Counties

	Respondents
UPS	20
Federal Express	18
Emery	12
Burlington	11
Cortez	6
Airborne	2
Yusen	1
AEI	1
AJA Fritz	1
Allfreight	1
AMT	1
Carotans	1
Circle	1
Coughlin	1
DCL	1
DHL	1
Encore International	1
Evergreen	1
Kuehne &	1
MOL	1
Panapina	1
Preston	1
Radix	1
RPS	1
Schinder	1
Service by Air	1
TAS	1
TNT Holland	1
Towne	1
Unistar	1

Source: W.E. Upjohn Institute

The results of a telephone survey of freight air carriers and forwarders that currently serve the Calhoun-Kalamazoo area support the argument that manufacturers have many air freight companies from which to choose, and that the competition among the carriers and forwarders is intense. Nearly all air carriers guarantee overnight service for any shipment under 150 pounds (some dimensional limitations apply) to any metropolitan area in the

United States. One air carrier offered overnight service regardless of weight. On-demand charter service is also readily available. Needless to say, many of these services are extremely expensive, but they are currently available.

Over the next ten years, the majority of area manufacturers expect to use the same amount of air cargo as they use today. As shown in Table 30, over 65 percent of the surveyed firms see no change in their usage of air freight in shipping their products. Twenty percent see a modest rise of no greater than 10 percent in the ten-year period. Regarding shipments of supplies, nearly 65 percent see no change over the next ten years (Table 31). Just over 26 percent predict at most a 10 percent increase, while nearly 8 percent will be working to reduce their usage of air for the shipment of supplies.

Table 30
Future Demand of Air Freight for Shipping Products
(responses weighted by employment size of responding firms)

	Percent
Same as today	65.6
Increase 5 percent or less	10.0
Increase 5 to 10 percent	10.0
Increase 11 to 20 percent	10.0
Increase 21 to 30 percent	3.3
Decrease over 10 percent	1.1

Source: W.E. Upjohn Institute

Table 31
Future Demand of Air Freight for Shipping Supplies
(responses weighted by employment size of responding firms)

	Percent
Same as today	64.3
Increase 5 percent or less	17.9
Increase 5 to 10 percent	8.3
Increase 11 to 20 percent	2.4
Decrease 10 percent or less	2.4
Decrease over 10 percent	4.8

Source: W.E. Upjohn Institute

Focus Group Reports

W.E. Upjohn Institute held three focus group sessions involving a total of twenty business representatives. Focus groups do not offer the breadth of information that a survey offers, but they do provide more in-depth responses. The meetings were held in Battle Creek, Kalamazoo, and Marshall. In all three focus group sessions, the participants were asked to respond to the following three general questions:

"Please list the major transportation problems you confront in doing business at your facility."

"How extensively does your company use air cargo to transport your final products or supplies? "

"Do you believe air freight transportation will become more important to your business in the next 10 years? Why or why not?"

Minutes from the three sessions are included in Appendix B of the report.

Participants in all three groups agreed that the drive to keep inventories low, quality high, and production capacity fully utilized has created a logistical environment where the availability of air freight service is crucial. One predominant theme, which echoed throughout the meetings, was that while everyone wants to avoid using air freight due to its high costs, the current competitive production environment demands it. Moreover, while air cargo is extremely expensive, the cost to the customer of having their operations "down" is much more costly.

Several participants cited a problem with balancing customer demand for just-in-time inventory control with the economic costs of supporting these activities. The simple fact is that it is not economical to ship components in small quantities. When the customer demands an expedited shipment of small quantities, air freight is often used. As manufacturers meet more demanding production and delivery schedules, customers simply demand still shorter delivery and production schedules. One participant mentioned the automotive industry as being probably the most "brutal" when it comes to meeting customer demand and at the same time keeping costs down.

The current just-in-time environment makes transportation planning nearly impossible, even with more powerful computers and better software. There will always be variables outside the firm's control. One problem is that firms across nearly all industries have slashed their lead times from weeks to hours. Simultaneously, everyone is trying to get the other guy to pay the inventory costs. Retail firms, in particular, work hard to keep inventories down. In short, as one participant summarized, "planning is gone in the procurement cycle." It has become a reactive system. Or as another concluded, "It comes down to time-based management with *time* being the key word."

Given this highly competitive landscape, the following transportation difficulties were identified by the participants:

- Participants complained frequently about the lack of door-to-door air cargo service. Delays in international shipments occur, most often, between the local area and the port of entry. The last leg of the trip tends to be the most troublesome. Several participants cited problems with delayed unloading and slow custom services with shipments going through Chicago. Several participants envy the range of services available at the nation's major air hubs. Cost increases and time delays become more likely with the number of times a shipment is handled or transferred during transit.

- The necessity of local companies to use Less than Truck Load (LTLs) adds costs and limits their negotiation abilities with freight haulers and forwarders. The overall concern with combining shipments in a single container is that one becomes less able to ensure timely delivery to your customer. The same tradeoff occurs when a company decides whether to take the time to compile a full load or ship LTL. The latter is responsive to customer demand, but the former is cheaper.

- Poor, unreliable truck service.

- A lack of service at the airport and rail yard to unload or load large containers. Currently, the standard 40 foot vessel/rail container travels no farther than Chicago, where it is unloaded and broken down, if the container is shared by more than one user.

- Poor air passenger service. Several participants complained about noncompetitive rates, frequent cancellations and delays, and the limited availability of jet service at the Kalamazoo-Battle Creek Airport.

- Being unable to find qualified freight-forwarder representatives in foreign countries.

- Participants with manufacturing facilities in the more rural areas of Calhoun and Kalamazoo Counties spoke of lengthy delays and transportation problems associated with minor/local roads in the county, and with weather conditions or accidents on I-94. Participants agreed that traffic flow on I-69 was not a problem.

Several participants mentioned that they would greatly benefit from the ability to unload cargo containers in the two-county region. It would limit uncertainty and assist in inventory control by eliminating that last problematic leg of the journey. Moreover, a container port would also help the area companies' cash flows. A bankable bill of lading can be issued for an international shipment by vessel when the container is loaded on a train in Battle Creek because the container is secured and sealed. This cannot be done by truck.

On the other hand, several participants expressed satisfaction with the existing level of air service currently available. The transportation facilities in Chicago are highly competitive and can efficiently handle vessel and air cargo container shipments. The area's proximity to Chicago should be considered an asset to the local economy. As one participant reminded his group, "We are not in Grand Island, Nebraska." Kalamazoo is 150 miles from Chicago and Detroit and has adequate freight forwarders.

One participant commented that many of the machines his company uses are foreign made, meaning that when there is a breakdown, they must get parts immediately from overseas. Air freight is mandatory in these instances.

In the Battle Creek session, several participants mentioned the former Grand Trunk Railroad container loading/unloading facility in Battle Creek which was closed after less than two years due to a lack of demand.

Regarding current and future use of air freight service, the consensus of the group was that it would only increase, although most are doing their best to minimize it. Such strategies include:

- A drive to consolidate more production activities into one location to avoid logistics delays. If this occurs, a location factor for that facility would be the availability of quality air cargo service, however.

- One participant spoke of an effort to "deglobalize" its supplier base by trying to use more suppliers in the Great Lakes region.

All of the participants believe that their companies' use of air freight will only increase during the next ten years. This is due to both an expected increase in the volume of business and an even greater increase in customers' demand for just-in-time service. However, future use of air cargo will also depend upon technological advancements of other competing transportation modes.

Air transportation will also become more critical as companies explore foreign markets. However, air transportation costs make a product less price competitive than those produced by the country's domestic companies. Therefore, to be successful in foreign markets, firms must work to make better quality products and to minimize production and distribution costs.

One participant said that his company is currently going through the supply chain distribution rationalization where they want to reduce the number of suppliers, distribution centers, and production plants. Only by upgrading transportation links can this restructuring be successful.

Air transportation has several advantages in addition to saving time. Packaging costs for air cargo is generally cheaper than oceangoing vessel. Second, it is easier to control the

temperature and humidity environment for products traveling by air, in part, because the trips are shorter.

One participant summed up his perception of the future need for air cargo transportation by noting the following two major trends.

- Firms are choosing to upgrade and invest in their existing manufacturing facilities. Ten to fifteen years ago, firms were looking elsewhere to install new production facilities; this is no longer the case.

- Growth is occurring outside the U.S.

The combination of these two trends means a heavier reliance on air. This is especially true as customers' lead times grow shorter.

Regarding the possible construction of a tradeport, the participants were supportive of the concept but not without concerns. One participant warned that local businesses could not support the facility alone; it would require bringing other companies into the local area. Another noted that a tradeport by itself would not eliminate the competitive advantage that firms near major air hubs enjoy. The number of scheduled direct flights available to tradeport users, for example, would be limited.

As to what the participants would like to see at a tradeport, one participant said that a warehouse where spare parts could be efficiently shipped would be helpful. Another participant mentioned a regular cargo flight to and from Europe would be an advantage. But at the same time, the participant acknowledged that the tradeport would have to attract firms from outside Calhoun and Kalamazoo Counties to support this service.

Several participants commented that the tradeport would improve the economic environment of the area by providing more options to manufacturers. The key point is competitiveness: A tradeport at the Kellogg Regional Airport must compete effectively on price and service with the facilities already in place.

Separate from the tradeport, however, one participant offered the idea of developing a computerized transportation bidding board that could promote competition among freight haulers. A manufacturer could enter a request for transportation bids on the board and select from submitted bidders.

Statistical Estimation of the Demand for Air Cargo Services

In this section, we use current national statistics to estimate the demand for air cargo shipments in Calhoun and Kalamazoo Counties. The movement of air cargo is not carefully monitored at the Kalamazoo-Battle Creek Airport except for "in-the-belly" cargo on scheduled flights. Enplaned air freight and air mail at the Kalamazoo-Battle Creek

International Airport have been declining over the past ten years. In 1984, 233.2 tons of cargo, including mail, was flown out of the airport on scheduled carriers. Since 1985, when the airport reached its peak of 427.5 tons, air cargo activity on scheduled carriers has declined to only 161.8 tons of air cargo in 1994.

This decline of cargo volumes on scheduled carriers is a poor indicator of air cargo demand, however. First, much of the decline in the amount of cargo being shipped out of the regional airport is due to the U.S. Postal Service moving much of its cargo activities to the Grand Rapids Airport. Second, the amount of cargo shipped on scheduled carriers is limited by the space availability. Higher passenger volumes and a shift to smaller commuter planes has seriously reduced cargo volumes.

Due to lack of available statistics, we calculated two separate estimates of the volume of cargo activities that is being generated by regional manufacturers. The first is based upon the area's industrial composition and national transportation statistics, while the second is based upon the results of our survey of area manufacturers.

A region's demand for air cargo services is highly dependent upon the size and composition of its industrial base. Assuming that area industrial productivity levels are similar to national averages and that area manufacturers' usage of air cargo follow national trends, we estimate that manufacturers in the eight county region of Allegan, Barry, Branch, Calhoun, Cass, Kalamazoo, St. Joseph, and Van Buren Counties generate approximately 7,900 tons of outbound air cargo in 1992.

Area manufacturers also receive a portion of their supplies and material inputs by air. Using the latest national input-output tables prepared by the U.S. Bureau of Economic Analysis coupled with national transportation statistics, we estimate that area manufacturers shipped approximately 2,400 tons of supplies into the area by air in 1992.[1] As is also true of the area's outgoing air cargo shipments, it is important to remember that currently incoming air cargo shipments are being handled at airports outside the region.

A second estimate of the volume of air cargo generated by area manufacturers is derived from the responses to our survey of manufacturers in Calhoun and Kalamazoo Counties. Even though we surveyed only firms in the two-county area, this estimate of air cargo usage

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[1]The area's industrial composition influences the volume of imports flown into the area, as well. Coupling the U.S Department of Commerce 1994 import data by major commodity groups with BEAs national input-output tables, we estimate that firms in Calhoun and Kalamazoo Counties received an estimated $61.5 million in imported components that arrived into the region by air. Currently these imports are flown into nearby airports, such as Chicago, Detroit, Rickenbacker (Columbus, Ohio) or Toledo and trucked to their final destination. This represents just 0.06 percent of the the nation's total volume of air shipped imports in these major commodity groups: $98.5 billion in 1994 (customs value). Although this must be taken as a rough approximation, it adds further evidence that since the two-county area represents 0.2 percent of the U.S. manufacturing workforce, the area's existing manufacturers are not heavy users of air transportation.

is much higher than that for the eight-county market area. According to the survey, manufacturers shipped an estimated 14,824 tons of cargo by air and received up to 7,780 tons of their materials by air in 1994.

The survey-based estimate for the two-county area is probably too high. First, this estimate is slightly above the estimate of air cargo usage prepared by HNTB Corporation for the Kent County International Airport in Grand Rapids. Defining the airport's market area to includes Allegan, Calhoun, Ingham (Lansing), Kalamazoo, Kent, Muskegon, and Ottawa Counties, HNTB estimated that about 11,325 tons of cargo were flown out and 9,988 tons were flown into the Kent County International Airport in 1994.

Second, the survey questions regarding mode of transportation used to ship goods and materials were separate from questions requesting a weight estimate on the annual volume of goods shipped and received. It is possible that respondents, attempting to show that they use air cargo rarely, could have entered a very small number for the percent of all cargo shipped by air. However, when this seemingly small share is multipled by the total weight of goods produced or received, the resulting air cargo volume is quite large. Unfortunately, the survey was not designed to allow respondents the opportunity to easily review this result.

In the next section, we provide an economic and fiscal impact analysis of a tradeport on the Calhoun-Kalamazoo area using both air cargo demand estimates. The low estimate is based on the first estimated total air cargo volume of 10,323 tons (1992), while the second is based on the survey-derived result of 22,604 tons of air cargo volume (1994). Since the latter is very similar to the volume of 21,313 tons estimated at the Kent County International Airport by HNTB, it is equivalent to estimating what would be the impact on the two-county area if all air freight currently being handled in Grand Rapids were transferred to the W.K. Kellogg Regional Airport.

Section IV
Economic and Fiscal Impact Analysis

We adopted a demand-pull approach in preparing our economic and fiscal impact estimates of establishing an international tradeport at the W.K. Kellogg Regional Airport. Such an approach focuses on the current and forecasted air cargo volumes generated by the region's existing industrial base. While the approach may appear too conservative to some, it is supported by numerous research studies that suggest that public infrastructure, such as airports, highways, public utilities, facilitates existing growth and does not serve as a catalyst for growth. Moreover, given the lack of success at existing tradeports and air cargo facilities in attracting manufacturing activities, it is only prudent for our analysis to reflect the apparent lack of need shown by manufacturers for locating in a tradeport environment. In short, expanding economic activity creates the demand for air cargo service and the need for advanced logistics facilities and not vice versa.

On the other hand, one could argue that a tradeport would position the community for future economic growth by offering transportation services that could be in great demand 10 to 20 years from now. If this is true, the fact that current tradeports are not attracting manufacturers today should be discounted because in the future it could make a substantial difference in the area's economic well-being. Unfortunately, we do not have any way to quantify this vision. Independent forecasts call for an increase in air cargo usages by manufacturers, but there is very limited information supporting the argument that this increased usage significantly influences their location decisions.

There are several studies that support the case that public infrastructure has only a limited impact on business productivity and employment.[2] The general result of these studies is that a 10 percent increase in public infrastructure investment causes as much as 4.0 percent reduction in production costs. The construction of a tradeport would represent a very small increase in the total public infrastructure of the two-county area; therefore, its impact on productivity and employment at area firms would be inconsequential.

Furthermore, it is important to note that this economic and fiscal impact analysis examines only the impact to the two-county area of the development of an international tradeport. The impact of all economic development efforts outside the tradeport is not factored into the study. In particular, the study does not attempt to either measure or reflect upon the future economic growth in the Fort Custer Industrial Park or along the I-94 corridor between Calhoun and Kalamazoo Counties.

We prepared two separate growth scenarios for the tradeport. The assumptions and costs associated with both are shown in Table 32. The first scenario provides a low growth

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[2] Studies summarized in "Assuming the Relationship Between Transportation Infrastructure and Productivity Growth," *Searching for Solutions: A Policy Discussion Series, No. 3*, sponsored by the Federal Highway Administration, U.S. Department of Transportation, 1992.

forecast based upon an initial air cargo volume of 14,254 tons in 1995, increasing at an annual rate of 8.4 percent during the forecast period. In this scenario, one 60,000 square-foot air cargo warehousing facility would be constructed at the W.K. Kellogg Regional Airport. The scenario calls for the cargo building to be less than 50 percent occupied in the first year, but to reach a 66 percent occupancy rate after five years of operations. A space utilization rate of 2 square feet per ton of cargo was used in the estimating the building's occupancy rate. FAA recommends a 1 square foot per ton utilization rate; however, at the Kent County International Airport a 1.5 square foot per ton rate proved to be inadequate. Second, we used a generally accepted employee per square foot ratio for wholesale trade of 1.6 employee per one thousand square feet of space. In addition, substantial improvements to the airport's taxilanes would be undertaken and a 71,000 square foot apron would be constructed. As shown in Table 32, the total cost of these improvements, including the building, would reach $7.8 million.

Although this scenario appears conservative, it rests on a strong assumption. It assumes that all of the 14,254 tons of air cargo traffic generated in the two-county area would move out of the W.K. Kellogg Regional Airport in 1995. Much of this cargo is now being efficiently moved from other airports.

Table 32
Assumptions Used in the Development of Growth Scenarios
for an International Tradeport at the W.K. Kellogg Regional Airport

	Low Growth	High Growth
Needed Capital Improvements		
Taxilanes	$2,250,000	$2,250,000
Aircraft Apron	1,300,000	1,510,000
Cargo Buildings	4,200,000	8,400,000
Roads and Utilies	63,000	96,000
Total Costs	7,813,000	12,256,000
1995 Air Cargo Volumes in Tons (8.4 % annual growth rate)	14,254	22,604
Revenue Sources		
Landing Fees	$ 0.75 per 1,000 lbs.	Same
Space Rentals	$7.50 per square	Same
Utilization Rate	2 square feet per	Same
Employee per 1000 square feet of warehousing	1.6 workers per 1000	Same
Manufacturing Employment	-0-	-0-

Source: W.E. Upjohn Institute

The second more aggressive scenario is based upon the air cargo estimates derived from the survey to area firms and is equivalent to the international tradeport at the W.K. Kellogg Regional Airport successfully capturing all of the air cargo activity in West Michigan, including Grand Rapids. In this scenario, total air freight at the airport would reach 26,561 tons in the first year and increase at the same 8.4 percent annual rate. To handle this level of activity, an additional apron space would be built and the size of the cargo building would be doubled to 120,000 square feet. Total cost of this expanded port facility would be $12.3 million dollars (Table 32).

Under both scenarios, residents of Calhoun and Kalamazoo Counties are levied a tax that covers each county's one dollar per capita contribution to the Tradeport Authority. Given the current financial and service delivery burdens facing both counties, it is unreasonable to assume that either one could simply absorb the cost of the tradeport without increasing taxes.

Two other growth scenarios were considered but not included in the estimates:

- ***The establishment of a major maintenance operational facility for a major carrier.*** Climate and the lack of a nearby passengers make the Battle Creek facility an unlikely candidate. However, the relocation of the WMU's flight school to the W.K. Kellogg Regional Airport and the proposed establishment of an airline pilot training academy may be viewed as complementary to an airline maintenance facility, and the airport may be attractive to a major carrier.

- ***A regional hub for an air cargo carrier.*** The necessary capital outlays are extremely high for attracting a regional hub for carriers such as Airborne, UPS, or Federal Express. Moreover, the competition from more established airports would be very intense.

Both scenarios lie outside the definition of a tradeport in that neither focuses on the needs of manufacturers. Moreover, the competition for these operations is extremely intensive and very expensive. Besides being high-risk ventures, both of the above options disregard the area's overall economic strengths. Calhoun and Kalamazoo Counties offer a competitive manufacturing location, with a well-regarded workforce--although in short supply-- and a wealth of training and education institutions. A regional hub or maintenance center would not build on any of these strengths.

Economic Impact of an International Tradeport

As shown on Table 33, the employment impact of an international tradeport under the low growth scenario reaches approximately 90 new jobs in the two-county area five years after its construction. The employment impact during the first year is due to the construction of the facility. Area nominal income generated by the tradeport would climb from just over $2 million in 1997 to $4.4 million in 2001.

Table 33
Economic Impact of an International Tradeport
Low-Growth Scenario

Activity	1996 Construction	1997 Year 1	1998 Year 2	1999 Year 3	2000 Year 4	2001 Year 5
Employment	80	63	68	74	80	87
Direct Employment	57	46	49	54	58	63
Indirect Employment	23	18	19	21	22	24
Personal Income ($million)	2.62	2.41	2.79	3.21	3.74	4.41
Cargo:		14,254	15,451	16,749	18,156	19,681
Outbound		10,893	11,808	12,800	13,875	15,040
Inbound		3,361	3,643	3,949	4,281	4,640
Growth Factor: 8.4% ann. avg.						
Bldg Space (sq. ft.)		60,000	60,000	60,000	60,000	60,000
Utility Spac: 2 sq ft/ton		28,507	30,902	33,497	36,311	39,361
Employment 1.6 pers/1000 sq ft		46	49	54	58	63
Occupancy Rate		47.5%	51.5%	55.8%	60.5%	65.6%

Source: W.E. Upjohn Institute

Manufacturing employment in the two-county area would hold steady, losing an insignificant number of jobs due to a slight rise in area wages because of the greater demand for occupations associated with material handling.

The estimated economic impact of the international tradeport under the high growth scenario is shown in Table 34. Area employment climbs by 180 jobs in the year 2001 due to the tradeport. Again, manufacturing employment holds steady, losing no more than 10 workers in 2005 due to the wage impact of the increased demand for material handlers.

Under both scenarios, all net new jobs would be located in Calhoun County, although workers filling these positions may reside in Calhoun, Kalamazoo, or any of the surrounding counties. In short, the negative impact on consumer spending of the increase in county taxes erased the minor employment gains in Kalamazoo County generated by the international tradeport.

Table 34
Economic Impact of an International Tradeport
High-Growth Scenario

Activity	1996 Construction	1997 Year 1	1998 Year 2	1999 Year 3	2000 Year 4	2001 Year 5
Employment	124	118	128	138	150	162
Direct Employment	90	85	92	100	108	117
Indirect Employment	34	33	35	38	42	45
Personal Income ($million)	4.07	4.32	5.02	5.86	6.87	8.07
Cargo:		26,561	28,792	31,211	33,832	36,674
Outbound		17,419	18,882	20,468	22,188	24,051
Inbound		9,142	9,910	10,742	11,645	12,623
Growth Factor: 8.4% ann avg,						
Bldg Space (sq. ft.)		120,000	120,000	120,000	120,000	120,000
Utility Space 2 sq ft/ton		53,122	57,584	62,421	67,665	73,348
Employment 1.6 pers/1000 sq ft		85	92	100	108	117
Occupancy Rate		44.3%	48.0%	52.0%	56.4%	61.1%

Source: W.E. Upjohn Institute

Fiscal Impact of the International Tradeport

Four separate fiscal impact estimates are presented in Tables 35 and 36. For each of the two growth scenarios, we estimated the fiscal impact of a one-county authority (Calhoun County) and of a two-county authority (Calhoun and Kalamazoo County). In all four cases, the tradeport would lose money through its first ten years. The net present value of the operating loss at the tradeport during the first 6 years of operation ranges from a low of $1.9 million in the low-growth, two-county authority scenario to a high of $4.9 million in the high-growth, one-county authority (using a discount rate of 8 percent). The one-county option is the most expensive simply because it excludes the financial support of Kalamazoo County.

The City of Battle Creek would earn small additional income tax revenues due to the increase in employment at the tradeport. These tax revenues go to the city and are not included in the Authority's revenue flow.

In summary, the tradeport would generate employment for between 90 and 160 individuals; however, in doing so it would be a fiscal liability to the area's county governments. The tradeport would have little to no impact on property values in the two-county area. Moreover, outside of those individuals that find employment at the facility, it will generate only minimal levels of increased economic activity for area residents.

Table 35 - Fiscal Impact of an International Tradeport
Low-Growth Scenario

	1996 Construction	1997 Year 1	1998 Year 2	1999 Year 3	2000 Year 4	2001 Year 5
TWO-COUNTY						
REVENUES:						
County Contribution	360,000	360,000	360,000	360,000	360,000	360,000
Space Rental: $/sf $7.50	0	213,803	231,763	251,231	272,334	295,210
Landing fees ($/1000 lbs) $0.75	0	21,380	23,176	25,123	27,233	29,521
Total Revenues:	360,000	595,183	614,939	636,354	659,567	684,731
COSTS:						
Capital Costs (15 yrs @ 8%)	912,789	912,789	912,789	912,789	912,789	912,789
Operations & Main (3%	0	60,000	61,800	63,654	65,564	67,531
Total Costs:	912,789	972,789	974,589	976,443	978,353	980,320
NET REVENUE:	-552,789	-377,606	-359,650	-340,089	-318,786	-295,589
ONE-COUNTY						
REVENUES:						
County Contribution	135,000	135,000	135,000	135,000	135,000	135,000
Space Rental: $/sf $7.50	0	213,803	231,763	251,231	272,334	295,210
Landing fees ($/1000 lbs) $0.75	0	21,380	23,176	25,123	27,233	29,521
Total Revenues:	135,000	370,183	389,939	411,354	434,567	459,731
COSTS:						
Capital Costs (15 yrs @ 8%)	912,789	912,789	912,789	912,789	912,789	912,789
Operations & Main (3%	0	60,000	61,800	63,654	65,564	67,531
Total Costs:	912,789	972,789	974,589	976,443	978,353	980,320
NET REVENUE:	-777,789	-602,600	-584,650	-565,089	-543,786	-520,589
CAPITAL COSTS:						
Taxilane	2,250,000					
Apron	1,300,000					
Cargo Bldg.	4,200,000					
Roads Utilities	63,000					
TOTAL:	7,813,000					

Source: W.E. Upjohn Institute

Table 36
Fiscal Impact of an International Tradeport
High-Growth Scenario

	1996 Construction	1997 Year 1	1998 Year 2	1999 Year 3	200 Year 4	2001 Year 5
TWO-COUNTY						
REVENUES:						
County Contribution	360,000	360,000	360,000	360,000	360,000	360,000
Space Rental: $/sf $7.50	0	398,414	431,881	468,159	507,485	550,113
Landing fees ($/1000 lbs) $0.75	0	39,841	43,188	46,816	50,748	55,011
Total Revenues:	360,000	798,255	835,069	874,975	918,233	965,124
COSTS:						
Capital Costs (15 yrs @ 8%)	1,434,199	1,434,199	1,434,199	1,434,199	1,434,199	1,434,199
Operations & Main (3% inflation)	0	120,000	123,600	127,308	131,127	135,061
Total Costs:	1,434,199	1,554,199	1,557,799	1,561,507	1,565,326	1,569,260
NET REVENUE:	-1,074,199	-755,944	-722,730	-686,532	-647,093	-604,136
ONE-COUNTY						
REVENUES:						
County Contribution	135,000	135,000	135,000	135,000	135,000	135,000
Space Rental: $/sf $7.50	0	398,414	431,881	468,159	507,485	550,113
Landing fees ($/1000 lbs) $0.75	0	39,841	43,188	46,816	50,748	55,011
Total Revenues:	135,000	573,255	610,069	649,975	693,233	740,124
COSTS:						
Capital Costs (15 yrs @ 8%)	1,434,199	1,434,199	1,434,199	1,434,199	1,434,199	1,434,199
Operations & Main (3% inflation)	0	120,000	123,600	127,308	131,127	135,061
Total Costs:	1,434,199	1,554,199	1,557,799	1,561,507	1,565,326	1,569,260
NET REVENUE:	-1,299,199	-980,944	-947,730	-911,532	-872,093	-829,136
CAPITAL COSTS:						
Taxilane	2,250,000					
Apron	1,510,000					
Cargo Bldg.	8,200,000					
Roads Utilities	96,000					
TOTAL:	12,256,000					

Source: W.E. Upjohn Institute

Section V
Conclusions

The Kalamazoo-Battle Creek MSA has been one of the more economically sound metropolitan areas in the Great Lakes States over the past several decades. While there are faster growing communities in the five-state region, including the Grand Rapids-Muskegon-Holland MSA to the north, the Kalamazoo-Battle Creek MSA's economy has not been stagnating. From 1983 to 1993, 31,900 new jobs were created in the three-county area, an increase of 27.3 percent.

Still, community and business leaders are becoming increasingly concerned about the future health of the area's economy. Their worries only intensified with the recent layoff announcements at the Kellogg Company, James River, Interkal and the planned 1998 closure of the General Motors' Kalamazoo County plant. We estimate that nearly 8,000 jobs will be lost in Calhoun and Kalamazoo Counties due to these announced layoffs and plant closures by the year 2005. In addition, many community and business leaders have expressed their frustration by what they perceive as a lack of a regional vision to economic development.

The proposed international tradeport is one of the most concrete regional economic development concepts put forth by area business leaders in many years. Our findings indicate, however, that an international tradeport, located at the W.K. Regional Airport, would have only a modest impact on the area's economy and would be a fiscal drain on the two county governments. Even in the high-growth scenario, where the tradeport would capture all air freight traffic generated in West Michigan including the Grand Rapids-Holland-Muskegon MSA, only 162 jobs would be created in 2001.

The tradeport is clearly not the sole option available to area business and community leaders as they work to develop a regional approach to economic development. Moreover, most leaders continue to agree that substantial benefits can be gained by pooling the resources of the two-county area. Unfortunately, they may also be overlooking the pre-conditions necessary to foster a successful regional approach. These conditions include:

- An urgent situation occurs which calls for cooperative action,
- The existence of a political constituency that is focused on the importance of cooperative approach to economic development,
- Early and continuing support by elected officials,
- Evidence showing that a cooperative effort is in everyone's interest,

- The emergence of a leader who can move the effort to completion.

- A project with clear perceived benefits.[3]

This is not an exhaustive list; for example, state or federal support would also be beneficial. Several of these conditions are currently in place; unfortunately, others are missing.

Whereas a tradeport may not be the best option for the area, regional cooperation on other activities holds promise.

- ***Develop an extensive land-use plan for the Fort Custer Military Reservation.***

  A promising activity for a two-county regional development effort would be the conversion of the Fort Custer Military Reservation into a regional industrial park. The first step in making this vision a reality would be the development of an extensive, environmentally-sound, land-use plan for the Fort Custer Military Reservation. The Military Reservation lies directly between the two urbanized areas of the MSA, has excellent access to I-94, rail, and the W.K. Kellogg Regional Airport. Moreover, the industrial park would alleviate the current dearth of available space in parcels of 100 or more acres in the two counties. Moreover, planned extensions of the City of Battle Creek sewer and water lines to the southwestern corner of the city offer the needed service for the park.

- ***Enhance training and education services.***

  Businesses in both counties are facing difficulties in finding quality workers. While the two counties have excellent educational institutions and programs, there is no shared vision that addresses the future needs of businesses for the area's **SHARED** workforce. Two problems hinder the two-county labor market: lack of information flow of employment opportunities across county lines and lack of a coordinated education delivery system.

- ***Develop a one-stop approach for businesses to obtain zoning and building permits within the two-county area.***

  Businesses seeking to expand or relocate operations into the two-county area can face bothersome and expensive delays due to their inability to obtain permits and zoning information in a timely manner. Since zoning ordinances and building permit procedures are established on the township and city level, a strong possibility exists of incompatible land uses lying adjacent to each other along the borders of local governmental units.

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[3] Cigler, Beverly et. al. Toward An Understanding of Multicommunity Collaboration U.S. Department of Agriculture, Economic Research Service, 1994.

This problem is even more likely to occur along the border of the two counties. The establishment of compatible and coordinated zoning definitions and building permit procedures in the two-county area would alleviate this problem. Moreover, the creation of an one-stop approach to disseminate this information would only enhance the overall efficiency of local governments.

- ***Develop a regional marketing effort which focuses on the assets shared by the two-county region.***

  As the Calhoun and Kalamazoo Counties meld into one economic unit, a regional marketing effort that builds upon the assets shared by the two counties holds promise. Economic development marketing is expensive and economics of scale may exist. One well-funded promotional campaign is likely to generate a greater number of responses than would result if its budget were divided between two competing promotional efforts. A joint marketing effort would allow the region to promote all of its assets to outside businesses.

Appendix A

Business Surveys

CHIEF EXECUTIVE' S BUSINESS SURVEY

EXPLORING REGIONAL ECONOMIC GROWTH OPPORTUNITIES

W.E. UPJOHN INSTITUTE FOR EMPLOYMENT RESEARCH

Area businesses, economic development organizations, and governmental units in Calhoun and Kalamazoo Counties are exploring regional economic development opportunities that build upon the region's strengths and more fully utilize its resources. The Economic Development Forum of Calhoun County and the CEO Council, Inc. of Kalamazoo County have contracted the W.E. Upjohn Institute to prepare an assessment of the region's economic development strengths and resources to assist regional leaders to identify regional economic projects that will enhance the region's economic competitiveness.

WE NEED YOUR ASSISTANCE in obtaining a better understanding of the region's economic strengths, weaknesses and assets. **PLEASE TAKE A FEW MOMENTS AND COMPLETE THE ATTACHED *CHIEF EXECUTIVE 'S BUSINESS SURVEY.***

One of the projects that will be carefully explored is the development of an **International Tradeport** at the W.K. Kellogg Regional Airport. An international tradeport is a fully-integrated transportation, distribution, and manufacturing complex which would allow manufacturers or distributors to operate in a just-in-time environment. For example, components could be flown in directly by plane, assembled and inspected in a duty-free foreign trade zone and shipped out by rail, truck or plane in a prompt and efficient manner.

For the Tradeport to be successful it must meet the needs of local businesses. We have enclosed a second survey, ***TRADEPORT DEMAND ASSESSMENT SURVEY.*** **PLEASE FORWARD THIS TECHNICAL SURVEY TO THE MOST APPROPRIATE PERSON IN YOUR ORGANIZATION.**

PLEASE MAIL BACK BY JUNE 22 USING THE ENCLOSED PRE-PAID ENVELOPES.

YOUR RESPONSES TO BOTH SURVEYS WILL BE KEPT STRICTLY CONFIDENTIAL.

THANK YOU. If you have any questions, please call George Erickcek, W.E. Upjohn Institute, 616-343-5541.

CHIEF EXECUTIVE' S BUSINESS SURVEY

EXPLORING REGIONAL ECONOMIC GROWTH OPPORTUNITIES

COMPANY CHARACTERISTICS

1. What is the name of your company? _____

2. Is your company a subsidiary of another company ____ Yes ____ No.

   If yes, what is the parent company's name and where is it headquartered?

   Name _____

   Headquarters _____

3. What are your principal product(s)? _____

   _____

   _____

4. How many individuals are employed at your *local* facility?_____

5. How long has your business been located in the region? _____

6. **For a regional economic development effort to be effective, it must be built upon the region's strengths and address the region's key economic weaknesses. Which of the following costs, services and resources have you found to be a strength or a weakness in doing business in the region?**

Area Economic Attribute	Strength	Weakness	Neither
Direct Labor Costs (e.g., wage rates)			
Indirect Labor Costs			
- Workers' Compensation			
- Health Care Insurance			
- Unemployment Insurance			
Labor Availability			
- Skilled Labor			
- Entry-level Labor			
Utility costs/service			
Transportation Services			
- Air Passenger Service			
- Air Cargo Service			
- Inter-city Truck Service			
- Rail			
Access to the Interstate Highway System			
Availability of Developable Land			
Proximity to Suppliers			
Proximity to Markets			
Availability of Accessible Financing			
K - 12 School System			
School-to-work Programs Including Technical Training			
Community Colleges			
Four-Year Colleges			
Graduate and Professional Schools			
Business Counseling (e.g., small business assistance)			
Economic Development Services (BCU, CEO Council, etc.)			

7. What other strengths and weaknesses in the local area have you found in doing business in the region?

_____

_____

_____

8. List the region's top three economic strengths? 1. _____

2. _____

3. _____

9. List the region's top three economic weaknesses? 1. _____

2. _____

3. _____

10. What is the probability of your firm expanding its operations in the Calhoun-Kalamazoo area in the next five years? _____ percent

If the cost of the following factors each declined by 5 percent, separately, would this change the probability of your firm expanding in the area? If so, what would be the new level of probability?

EXAMPLE: Suppose on question 10, you put down a 30 percent probability of expanding during the next five years. If you think a 5 percent decline in wages would increase that probability of expanding to 50 percent, instead of 30 percent, then you would write down 50 percent in the box below. NOTE: EACH FACTOR SHOULD BE EXAMINED SEPARATELY.

A 5 percent decline in the following factors: (SEPARATELY)	New Probability of Expanding during next 5 yrs. (if the 5 percent decline would not have an impact, write "No Change")
WAGES	
EMPLOYEE BENEFITS COSTS	
RECRUITMENT COSTS	
TRAINING COSTS FOR NEW AND EXISTING WORKERS	
TAXES	
TRANSPORTATION	

11. **Many business leaders are exploring opportunities where local governments in Calhoun and Kalamazoo Counties can work together and provide more efficient and cost-effective services and/or programs that impact the business community. What governmental services/programs do you think can be effectively provided on a regional basis.**

_____

_____

_____

_____

THANK YOU. PLEASE MAIL THIS SURVEY BACK IN THE ENCLOSED SELF-ADDRESSED, PRE-PAID ENVELOPE OR ADDRESS IT TO:

Tradeport Study
W.E. Upjohn Institute for Employment Research
300 S. Westnedge Avenue
Kalamazoo, MI 49007

TRADEPORT DEMAND ASSESSMENT SURVEY

CALHOUN AND KALAMAZOO COUNTIES

W.E. UPJOHN INSTITUTE FOR EMPLOYMENT RESEARCH

PLEASE FILL OUT THIS SURVEY EVEN IF YOU DO NOT BELIEVE THAT YOUR COMPANY WILL USE THE TRADEPORT IF CONSTRUCTED. IT IS VITAL THAT WE HEAR FROM ALL SECTORS OF THE REGION'S INDUSTRIAL BASE.

IN ANSWERING THIS SURVEY, IF THE INFORMATION REQUESTED IS NOT READILY AVAILABLE, PLEASE MAKE YOUR BEST ESTIMATE.

COMPANY NAME: _____

RETURN A.S.A.P., BUT NO LATER THAN JULY 15. THANK YOU!

SHIPMENT OF PRODUCT(S)

1. When shipping your products, what percent, according to weight and value, is shipped through the following transportation modes and facilities? If shipment data are not readily available, please make your best estimates.

Outbound Shipments Only

	Percent by Weight	Percent by Value
TRUCK ONLY*		
RAIL ONLY*		
TRUCK & RAIL** COMBINATION		
AIR (Kalamazoo & Kellogg Regional Airports)		
AIR (Kent County)		
AIR (Chicago or Detroit)		
AIR: Other_____		
OTHER (e.g., UPS or Federal Express) _____ _____		
TOTAL	100%	100%

*Include all door-to-door shipments and shipments to oceangoing vessels. Please include truck and rail shipments transferred in route to air freight carriers in the appropriate air freight categories.
** Example: freight trucked to Chicago, loaded on rail and moved to its final destination or to an ocean port for international export.

2. In 1994, what was the estimated total value *(total invoiced value)* and weight of the products shipped from your facility?

   Total Value $_____ Total Weight _____ tons

3. What percent of your customers *by dollar value of sales* is in the following areas?

   ____ Within 150 miles of your local facility
   ____ Between 150 and 500 miles of your local facility
   ____ Between 501 and 1,000 miles of your local facility
   ____ More than 1,000 miles away but in the U.S. or Canada
   ____ Mexico
   ____ Europe
   ____ East Asia, Japan, South Korea, China, Singapore etc.
   ____ Other
   100%

4. Regarding your products which are shipped by air, for at least one segment of their journey, what percent of the value of these shipments is made: (Please give your best estimate.)

   ____ On a regular daily basis.
   ____ On a regular weekly basis.
   ____ On a customer demand basis, i.e., filling individual orders for replacement parts or small instruments (non emergencies).
   ____ Only on an emergency basis.
   ____ Other (please explain)
   100%

   REMARKS: _____
   _____
   _____
   _____

5. My company does not use air freight to ship our product(s) more often because of (check as many as apply):

   ____ The relative cost of air freight compared to other modes of transportation.
   ____ The lack of need, e.g., truck and rail transportation modes are adequate.
   ____ The lack of local air freight services.
   ____ Limited information on the sales potential of selling in foreign (international) markets.
   ____ Other (please explain)_____
   _____
   _____

   REMARKS: _____
   _____
   _____
   _____

6. Ten years from now, do you see your company using air freight *to ship your products?*

_____ Decreasing by over 10 percent
_____ Decreasing but by no more than 10 percent
_____ Same as today
_____ Increasing by no more than 5 percent
_____ Increasing by between 5 to 10 percent
_____ Increasing by between 11 to 20 percent
_____ Increasing by between 21 to 30 percent
_____ Increasing by between 31 to 50 percent
_____ Increasing by greater than 50 percent

REMARKS_____

_____

_____

_____

_____

SHIPMENT OF SUPPLIES

7. In the manufacturing of your principal products, what are the three major material inputs (e.g. paperboard, stainless steel tubing) that you use, where are your major suppliers of these materials currently located, and what was your total expenditure for this material in 1994?

Material	Location of Current suppliers City	State	Nation	Total 1994 Expenditure
	_____	_____	_____	
	_____	_____	_____	
	_____	_____	_____	
	_____	_____	_____	
	_____	_____	_____	
	_____	_____	_____	
	_____	_____	_____	
	_____	_____	_____	
	_____	_____	_____	

8. What percent of your supplies are shipped to you by the following modes of transportation and facilities? If data are not readily available, please make your best estimates.

Inbound Shipments Only

	Percent by Weight	Percent by Value
TRUCK ONLY*		
RAIL ONLY*		
TRUCK & RAIL** COMBINATION		
AIR (Kalamazoo & Kellogg Regional Airports)		
AIR (Kent County)		
AIR (Chicago or Detroit)		
AIR: Other_____		
OTHER (e.g. UPS or Federal Express)_____ _____		
TOTAL	100%	100%

*Include all door-to-door shipments and shipments unloaded from oceangoing vessels. Please include truck and rail shipments transferred in route from air freight carriers in the appropriate air freight categories.

** Example: freight loaded on rail at the supplier's facility or at an ocean port, moved to Chicago where it is broken-down and transferred to truck for the final leg of the journey.

9. In 1994, what was the estimated total value and weight of the supplies shipping into your facility?

Total Value $_____ Total Weight _____ tons

10. What percent of your suppliers *by dollar value of purchases* are in the following areas?

_____ Within 150 miles of your local facility
_____ Between 150 and 500 miles of your local facility
_____ Between 501 and 1,000 miles of your local facility
_____ More than 1,000 away but in the U.S. or Canada
_____ Mexico
_____ Europe
_____ East Asia, Japan, South Korea, China, Singapore etc.
_____ Other (please explain)_____

100%

11. Regarding your supplies which are shipped to you by air, for at least one segment of their journey, what percent of the value of these shipments is made: *(Please give your best estimate.)*

____ On a regular daily basis.
____ On a regular weekly basis.
____ On a regular monthly basis.
____ Only on an emergency basis.
____ Other, (please explain) _____
100%

REMARKS:_____
_____
_____
_____

12. My company does not use air freight for supply shipments more often because of (check as many as apply):

____ The relative cost of air freight compared to other modes of transportation.
____ The lack of need, e.g., truck and rail transportation modes are adequate.
____ The lack of local air freight services.
____ Limited information on the sales potential of selling in foreign (international) markets.
____ Other (please explain)_____
_____

REMARKS:_____
_____
_____
_____

13. Ten years from now, do you see your company using air freight *for supplies*?

_____ Decreasing by over 10 percent
_____ Decreasing but by no more than 10 percent
_____ Same as today
_____ Increasing by no more than 5 percent
_____ Increasing by between 5 to 10 percent
_____ Increasing by between 11 to 20 percent
_____ Increasing by between 21 to 30 percent
_____ Increasing by between 31 to 50 percent
_____ Increasing by greater than 50 percent

REMARKS_____
_____
_____
_____

14. What are the name(s) of air freight carriers or forwarders you are presently using?

_____

_____

15. A tradeport, if constructed, would offer a wide range of services. Please indicate the facilities or services that would have the HIGHEST BENEFIT to your firm. (*Check as many that apply.)*

____ Public warehouse space directly accessible by plane in a foreign-trade zone.
____ Manufacturing space directly accessible by plane in a foreign-trade zone.
____ A railroad container port for the loading and unloading of containers for national and international shipments.
____ Public warehousing with ready access to truck and rail transportation in a foreign-trade zone.
____ Building sites for the construction of a distribution center with ready access to rail, truck and air service
____ Building sites for the construction of a manufacturing facility with ready access to rail, truck and air service.
____ Other (please specify)_____

_____

16. Position of person completing the survey: _____

THANK YOU! IF HAVE ANY QUESTIONS REGARDING THIS SURVEY, PLEASE CALL GEORGE ERICKCEK 616-343-5541. WHEN COMPLETED, PLEASE USE THE ATTACHED SELF-ADDRESSED, PRE-PAID ENVELOPE OR MAIL TO:

Tradeport Study - TS
W.E. Upjohn Institute for Employment Research
300 S. Westnedge Avenue
Kalamazoo, MI 49007

Appendix B

Minutes of the Tradeport Focus Group Sessions

FOCUS GROUP SESSION ON THE PROPOSED

INTERNATIONAL TRADEPORT AT THE W.K. KELLOGG REGIONAL AIRPORT

REGIONAL MANUFACTURING TECHNOLOGY CENTER

March 29, 1995

Participants:

Kathy Barker, Int'l. Account Specialist	Union Pump Company
William Bennett, Div. Purchasing Mgr.	Eaton Corporation - Engine Components Operations North America
Patrick Cronin, Manager, Personnel	Koyo Corporation
Jerry Mainstone, Information Systems Mgr.	AMT Freight, Inc.
Ralph J. Moore, Director of Purchases	Atwood Automotive, Inc.
Masahiro Nakamura, Mgr. of Int'l. Procurement	Hi-Lex Corporation
Joseph J. Tubilewicz, V.P., Worldwide Purchasing	Kellogg Company

Facilitators:

George Erickcek	Upjohn Institute
Christine Fahndrich	Upjohn Institute

Participants were first asked to list the major transportation problems they confront while doing business in the Battle Creek area. The majority of the responses related to today's changing and more demanding international business environment. The drive to keep inventories low, quality high, and production capacity fully utilized has created a logistic environment where the availability of air freight service is crucial. One predominant theme echoed around the table was that while everyone wants to avoid using air freight due to its high costs, the current competitive production environment demands it.

In addition, the current intensive business climate offers little allowance for natural or unexpected problems. Customers do not want to hear about storms on the Atlantic, floods in California, or longshoreman strikes in Montreal; they want a supplier that can deliver. Finally, most in the room agree that this fast-paced environment is here to stay.

Given this highly competitive landscape, the following transportation difficulties were identified by the participants:

- Delays in international shipments occur, most often, between Battle Creek and the port of entry, be that Chicago, Baltimore or elsewhere. The last leg of the trip tends to be the

most troubled. Several participants cited problems with delayed unloading, slow custom services with shipments going through Chicago.

- The necessity of local companies to use Less than Truck Load (LTLs) adds costs and limits their negotiation abilities with freight haulers and forwarders.

- Poor truck service including the disappearance of high-valued cargo.

- A lack of service at the airport and rail yard to unload or load large containers. Currently, the standard 40 foot vessel/rail container travels no farther than Chicago, where it is unloaded and broken down, if the container is shared by more than one user. The shipment is then trucked to Battle Creek.

Several participants mentioned that they would greatly benefit from the ability to unload cargo containers in Battle Creek. It would limit uncertainty and assist in inventory control by eliminating that last problematic leg of the journey. Moreover, a container port would also help area companies' cash flows. A bankable bill of lading can be issued for an international shipment by vessel when the container is loaded on the train in Battle Creek because the container is secured and sealed. This cannot be done by truck.

However, Grand Trunk Railroad offered a container loading/unloading facility in Battle Creek, but it was closed after less than two years due to a lack of demand. One participant called the facility Battle Creek's "best kept secret." Indeed, several other participants said that they would have used the facility if they had known about it.

Each participant cited their own unique air freight needs. One spoke of the need to ship a 30,000 lbs, 8 ft. long, 6 ft. high, 8 ft. wide payload. The company usually calls airports within a 24-hour truck radius to find an available plane. It is extremely expensive, but the cost to the customer of having their operations "down" is much more costly. Other participants agreed that customers suffering equipment breakdowns increasingly demand that parts be flown in as quickly as possible. These industries have little choice other than to pay air cargo rates.

Regarding current and future use of air freight service, the consensus of the group was that air freight usage would only increase, although most are doing their best to minimize it.

One participant spoke of a drive to consolidate more production activities into one location to avoid logistics delays. If this occurs, a location factor for that facility would be the availability of quality air cargo service, however.

Future use of air cargo will also depend upon technology advancements of other competing transportation modes.

Finally, while all participants agreed the future business climate will demand flexible and fast transportation services, several pointed out that

- Some manufacturers located in the area do not now nor in the future plan to use air freight services. One participant spoke of an effort to "deglobalize" its supplier base by trying to use more suppliers in the Great Lakes region. Cost reduction, including limiting the use of air freight, is always a prudent business strategy. Moreover, some products by their very nature and established distribution networks will not need air freight service.

- Another participant reminded the group that the transportation facilities in Chicago are highly competitive and can efficiently handle vessel and air cargo container shipments. The area's proximity to Chicago should be considered an asset to the local economy. Delays do happen, but they could also occur in a local tradeport facility as well. The key point is competitiveness: would a tradeport at the Kellogg Regional Airport effectively compete on price and service with the facilities already in place?

FOCUS GROUP SESSION ON THE PROPOSED

INTERNATIONAL TRADEPORT AT THE W.K. KELLOGG REGIONAL AIRPORT

W.E. UPJOHN INSTITUTE FOR EMPLOYMENT RESEARCH

March 30, 1995

Participants:	
John L. Bowden, V.P.Operations and Services	Durametallic
Matthew R. Deittrick, Administrative Manager	Azon USA Inc.
Curtis Hall, General Counsel	Stryker Corporation
Dan Kaiser, President	Ronningen-Petter
Larry Mankin, President	Kalamazoo County Chamber of Commerce
Ted Pokorski, Corporate Real Estate Manager	Upjohn Company
John VanderPloeg, President	Ship-Pac

Facilitator:	
George Erickcek	W. E. Upjohn Institute

Participants cited several transportation problems they incur in doing business in Kalamazoo County. These include:

- Poor air passenger service. Several participants complained about noncompetitive rates, frequent cancellations and delays, and the limited availability of jet service at the Kalamazoo-Battle Creek airport. Several mentioned that fares offered at surrounding airports can be 15 to 60 percent less than those charged locally.

- The lack of door-to-door air cargo service. Several participants envy the range of services available at the nation's major air hubs. Cost increases and time delays become more likely with the number of times a shipment is handled or transferred during transit.

- Being forced to pay high rates for less-than-truck-load (LTL) service in and out of Kalamazoo. Just-in-time (JIT) delivery for small amounts of materials is expensive. Fortunately, participants find area rates on full truck loads to be competitive.

- Facing unreliable truck service. Several participants complained that too often overnight service turns into a three- to four-day delivery.

- Being unable to find qualified freight forwarder representatives in foreign counties. One participant cited difficulty using a well-known U.S. freight forwarder because its foreign service representative was unreliable. Shipments can get to the customers' country only to sit "on the dock" for a couple of weeks.

In addition, one participant warned that foreign customers are starting to dictate the shipper a supplier must use. For the customer, this is a cost saving move, but for the supplier it a potential problem if the shipper is uncooperative or provides poor service. As an example, an international customer may require the supplier to use a freight forwarder who has only one representative for the whole U.S.

One participant pointed out that local manufacturers are at a competitive disadvantage to firms located near major transportation hub. For example, the transportation cost borne by a Kalamazoo firm of shipping its product to Chicago for air shipment is added to that which a Chicago competitor would pay for the same air service. In short, handling fees and charges add up.

Several participants discussed the cost and service tradeoff of shipping partial containers vs. using fully loaded multi-user containers. Freight forwarders offer lower fares if they can fill containers with multiple loads. However, the process of combining more than one load in a container is time consuming. In addition, the customer and supplier lose control when their shipment is combined with other shipments in a container. The overall concern with combining shipments in a single container is that you become less able to insure timely delivery to your customer.

The same tradeoff occurs when a company decides whether to take the time to compile a full load or ship LTL. The latter is responsive to customer demand, but the former is cheaper.

Most of the participants agreed that manufacturers are working in a just-in-time (JIT) environment that demands air freight. One participant reported that to meet customers' demands, his company must often air freight its supplies.

All of the participants believe that their companies' use of air freight will only increase during the next ten years. This is due to both an expected increase in the volume of business and an even greater increase in customers' demand for JIT service.

The current JIT environment makes transportation planning nearly impossible, even with more powerful computers and better software. There will always be variables outside your control. One problem is that firms across nearly all industries have slashed their lead times from weeks to hours. The delivery problems of your customers is quickly becoming your problem.

Simultaneously, everyone is trying to get the other guy to pay inventory costs. Retail firms, in particular, work hard to keep inventories down. In short, as one participant summarized, "planning is gone in the procurement cycle." It has become a reactive system. Or as another concluded, "It comes down to time-based management with TIME being the key word."

Air transportation will also become more critical as companies explore foreign markets. However, air transportation costs make your product less price competitive than those produced by the country's domestic companies. Therefore, to be success in foreign markets,

firms must work on both making a better quality product and on minimizing production and distribution costs. One participant said that they are currently going through the supply chain distribution rationalization where they want to reduce the number of suppliers, distribution centers, and production plants. Only by upgrading transportation links can this restructuring be successful.

Air transportation has several advantages on top of saving time. Packaging costs for air cargo is generally cheaper than oceangoing vessel. Second, it is easier to control the temperature and humility environment of products traveling by air, in part because the trips are shorter.

One participant summed up the future need for air cargo transportation by noting the following two major trends.

- Firms are choosing to upgrade and invest in their existing manufacturing facilities. Ten to fifteen years ago, firms were looking elsewhere to install new production facilities; this is no longer the case.

- Growth is occurring outside the U.S.

The combination of these two trends means a heavier reliance on air. This is especially true as customers' lead times grow shorter.

Regarding the possible construction of a tradeport, the participants were supportive of the concept, but not without concerns. One participant warned that local businesses could not support the facility alone; it would require bringing other companies into the local area. Another noted that a tradeport by itself would not eliminate the competitive advantage firms near major air hubs enjoy. The number of scheduled direct flights available to tradeport users, for example, would be limited.

In addition, several participants expressed satisfaction with the existing level of air service currently available. In particular, several participants spoke highly of Federal Express and UPS in delivering small packages such as instruments or small parts within 24 hours. As one participant reminded the group "We are not in Grand Island, Nebraska." Kalamazoo is 150 miles from Chicago and Detroit and has adequate freight forwarders.

As to what the participants would like to see at a tradeport, one participant said that a warehouse where spare parts could be efficiently shipped would be helpful. Another participant mentioned a regular cargo flight to and from Europe would be an advantage. But at the same time, the participant knew that the tradeport would have to attract firms from outside the Kalamazoo-Battle Creek area to support this service.

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ALBION-MARSHALL AREA

FOCUS GROUP SESSION ON THE POTENTIAL

OF AN INTERNATIONAL TRADEPORT

CALHOUN INTERMEDIATE SCHOOL DISTRICT

April 11, 1995

PARTICIPANTS:

David Berzina	Marshall Area Chamber of Commerce
Bill Blank	Air-way Manufacturing Company
John Miller	J.F. Millers Sales Company
Joe Palchak	Eaton Corporation-Proving Grounds
Chuck Reuther	
Peggy Sindt	Albion Economic Development Corporation

FACILITATOR:

George A. Erickcek	W.E. Upjohn Institute

Participants were first asked to identify the major transportation problems they face in doing business in the Albion-Marshall area. Several participants cited both the difficulties in moving goods on some minor/local roads in the county and the lengthy delays that can occur on I-94 due to weather conditions or accidents. Another participant commented that many companies in Marshall lack direct access to I-94. Still, another said his company's future usage of air may depend on the future level of congestion on I-94. If surface traffic gets too congested, it could cause the company to use air more often. Participants agreed that traffic flow on I-69 was not a problem.

Several participants cited a problem with balancing customer demand for just-in-time inventory control with the economic costs of supporting these activities. The simple fact is that it is not economical to ship components in small quantities. In situations when the customer demands an expedited shipment of small quantities, air freight is often used. One participant observed that as manufacturers meet more demanding production and delivery schedules, customers simply demand even shorter delivery and production schedules. One participant mentioned the automotive industry as being probably the most "brutal" when it comes to meeting customer demand and at the same time keeping costs down.

Regarding trucking, one participant said that he has found some common carriers to be unreliable. All participants complained that local less-than-truck load (LTL) rates are very high. One participant commented that UPS does a good job in delivering LTL, but that he would also like to see more competition to insure that UPS does not raise rates in the future.

The changing international business environment is pushing companies toward using more air freight services; however, the economics of air cargo is still weak. Most participants agreed as more customers, especially autos, go toward global sourcing it will mean shipping parts worldwide. This will increase the need of air cargo especially if inventories are kept tight. Also, many customers are requesting their suppliers to move with them to foreign markets.

For one participant the lack of a regional cargo airport is causing his company to break down supply shipments as many as three times on route. Supplies are first flown into the county, broken down at the airport, trucked to the Marshall area and then broken down again and trucked to area production facilities. The necessity to break down its shipments en route forces the company to lock funds into inventories. The ability to fly these supplies directly into Battle Creek would eliminate these inventory costs and save time.

One participant commented that many of the machines his company uses are foreign made, meaning that when there is a breakdown, they must get parts immediately from overseas. Air freight is mandatory in these instances.

Several participants commented that the tradeport would improve the economic environment of the area by providing more options to manufacturers.

Separate from the tradeport, however, one participant offered the idea of developing a computerized transportation bidding board that could promote competition among freight haulers. A manufacturer could enter a request for transportation bids on the board and select from submitted bidders.

Finally, several participants thought that a transportation hub offering various modes of transportation would be welcomed.