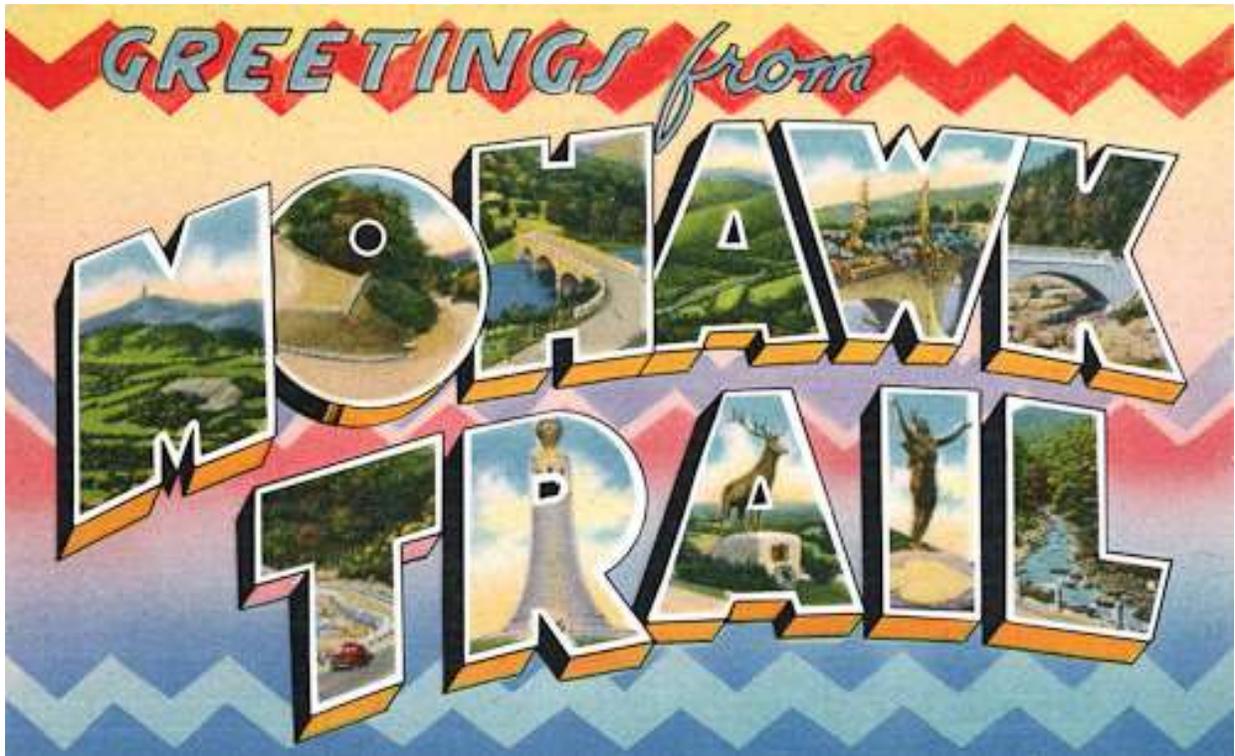


The Northern Tier's Key Economic Clusters: Then and Now



Produced by the Franklin Regional Council of Governments with the Franklin County Community Development Corporation, the Berkshire Regional Planning Commission and the collaborators of the Economic Resiliency in the Northern Tier Project.

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The Northern Tier:

Communities in northern Berkshire County, Franklin County and the North Quabbin area of Worcester County

I. INTRODUCTION

For decades, the Northern Tier¹ of Massachusetts has been identified as an area of both economic need and economic opportunity. The region is recognized for its strong tradition of manufacturing, for its exceptional natural environment, and for its outstanding cultural resources. At the same, this region continues to face economic challenges as the nation's economy has shifted from a goods producing to a services based economy and which was exacerbated by the impacts of Tropical Storm Irene in 2011 and the recent economic recession.

The Economic Resiliency in the Northern Tier (ERNT) Project is the latest effort to target this area to support business growth and economic revitalization. The project is funded by a U.S. Economic Development Administration (EDA) grant awarded to the Franklin County Community Development Corporation (FCCDC), in cooperation with the Berkshire Regional Planning Commission (BRPC) and the Franklin Regional Council of Governments (FRCOG). The region became eligible for this EDA funding program because of the significant impacts the region experienced from Tropical Storm Irene in August 2011.

Through these resources and in collaboration with a broad spectrum of collaborators, the ERNT Project is creating a more robust and cohesive system of business development support. The ERNT project is able to connect existing and start-up businesses with support services as well as provide direct technical assistance. Part of the ERNT project also supports capacity building within northern Berkshire County and to better interconnect business development entities across northern Berkshire County, Franklin County, and the North Quabbin area.

The bringing together of business development entities and stakeholders from across the Northern Tier has happened before. In 1986 and 2004 economic development studies were prepared by Mt. Auburn Associates with the intention to improve the lives of residents and the economic health of communities in the Northern Tier. The strategies identified highlighted specific industry clusters that could be enhanced to spur job creation and greater economic vitality in the region.

As part of the ERNT Project, this report seeks to reflect upon those past studies and further examine specific industry clusters. The first section of this report reviews the 1986 and 2004 Northern Tier studies, and identifies how their findings and recommendations have been addressed over the years. Considerable work has been accomplished that can trace its roots back to these studies. In later years, most of these initiatives were specific to sub-regions of the Northern Tier or in combination with other regions (such as the Pioneer Valley). An inventory of relevant reports and projects

¹ The Northern Tier is defined, for the purposes of this report, as consisting of the municipalities of northern Berkshire County, Franklin County, and the North Quabbin area.

is included in this document so that multiple stakeholders from across the Northern Tier can learn about what has been done and build upon them.

As part of these Northern Tier studies, key industry clusters were identified that had existing assets and growth potential. The second section of this report includes an analysis of select industry clusters for Berkshire and Franklin Counties.

II. PAST NORTHERN TIER STUDIES

The previous Northern Tier studies were championed by former U.S. Congressman John W. Olver. Congressman Olver represented parts of this region as both a state representative and state senator in the 1980s and early 1990s, and then represented the entire region as the U.S. Congressman for the First District from 1991 to 2012. Congressman Olver recognized that many of the most economically disadvantaged communities in the Commonwealth were located in his rural western and central Massachusetts district. He called for a comprehensive study of the region to identify strengths and make recommendations for how stakeholders could work cooperatively to improve the economic conditions of this region. Studies targeting the area were completed in 1986 and then in 2004 by a team of consultants led by Mt. Auburn Associates and with input by community leaders.

Looking back at these studies, most of the recommendations identified have been addressed by various efforts. In many cases, these efforts have been based in Berkshire County, Franklin County and/or the North Quabbin area; as opposed to a comprehensive Northern Tier corridor-wide implementation. Often efforts have taken years to launch and implement. Some efforts were only in effect for a finite period of time, while others have been firmly established and continue. When possible, web links to entities, programs or documents that provide further information are provided.

1986 Northern Tier Study

Beginning in the 1970s and 1980s, the region became increasingly impacted by the shift away from large scale manufacturing and toward a more service-based economy. A project was commissioned by State Senator John W. Olver in 1986 to assess the economic conditions from the Gardner area to the western edge of Franklin County, and develop strategies to enhance the economic opportunities. From this project, *The Northern Tier Economy: A Strategic Analysis*² was created. The study reviewed important economic sectors in the region and created recommendations that could be implemented to develop a stronger economy. The study was prepared by Mt. Auburn Associates with input by state and local stakeholders. The study was presented to the

² Mt. Auburn Associates with the Northern Tier Strategic Analysis Advisory Committee. *The Northern Tier Economy: A Strategic Analysis*. June 1986. The report was funded by the Massachusetts Executive Office of Communities and Development.

Massachusetts Executive Office of Communities and Development and the Northern Tier Strategic Analysis Advisory Committee in June 1986.

The study's scope included the twenty-six Franklin County towns plus 10 Worcester County towns in the North Quabbin region that extended as far east as the Town of Westminster. The study focused its statistical analysis on the region as a whole and also provided data on the three subregion's centered around Athol, Gardner and Greenfield. As part of developing this study, the preparers conducted two surveys: one of manufacturing and service sector employers, and one of commercial lenders. Based on the information gathered and the input of the Advisory Committee, a strategic plan with specific recommendations was created.

The recommendations of the 1986 study were designed for "meeting the challenge ahead" for this region. These challenges were described as:

1. Helping existing business to remain competitive in this new economic environment.
2. Encouraging entrepreneurial development in both traditional and new industries.
3. Attending to immediate community needs.
4. Developing a vision of the region's future, based on new cooperative relationships, which reflects the needs and desires of a broad base of the community.

There were nine recommendations with corresponding objectives identified in the study (see Appendix 2 for complete listing). Recommendations primarily focused on promoting business and industry development through collaboration and cooperation of public and private sector entities.

With the completion of this study, the Northern Tier Project Manager (a position within the UMass Cooperative Extension Service secured through state funding) instigated action to implement these recommendations. The result of this work is described in a follow up document titled, *The Northern Tier Project: A Five Year Summary Report, 1985-1990*³. The summary explains the various activities undertaken and the outcomes of those actions. While not all recommendations were implemented, many were successfully pursued. In some instances, the actions undertaken were adjusted to fit the needs and opportunities available at the time, and as a result were not to the letter of the initial recommendation. This was not seen as a deficiency, but rather a sensible adjustment.

The summary report highlights the actions related to four specific industry clusters and one cross-sector strategy that were pursued. The following table compares activities undertaken by cluster and strategy with some highlights of initiatives launched.

³ Mt. Auburn Associates. *The Northern Tier Project: A Five Year Summary Report, 1985-1990*. January 1990. The report was funded by the Massachusetts Small Business Development Center.

Table 1: 1986 Northern Tier Study – Activities and Outcomes

Sector Activities	Highlighted Outcomes	Related Recent Activities
Metalworking Sector		
<ul style="list-style-type: none"> • Activities focused on supporting industry innovation, and strengthening relationships between industry and educational institutions to support training initiatives. 	<ul style="list-style-type: none"> • The Machine Enhancement, Education and Training (MEET) Program created a machine trades curriculum for use by the Franklin County Technical School. Greenfield Community College planned new courses in computer aided machining and supervisor training. 	<ul style="list-style-type: none"> • <i>See Table 2 for recent activities in the Manufacturing Sector.</i>
Specialty Food Industry		
<ul style="list-style-type: none"> • Activities focused on creating structures that could catalyze the emerging industry, such as creating an industry association that links food producers and processors, developing a Food Science & Technology Center at UMass, and creating a food-related enterprise center. 	<ul style="list-style-type: none"> • The Western Massachusetts Food Industry Association was formed to bring together farm-related processors, specialty food growers and food processing companies. The Association held networking events, published a newsletter and a directory, and provided technical assistance. • Examined the possibility of creating an Agricultural Industrial Park. However, a shared use kitchen facility was identified as of interest. As a result, an effort began to develop such a facility in Greenfield. 	<ul style="list-style-type: none"> • The FCCDC Western Massachusetts Food Processing Center opened in 2001 and provides access to a shared use commercial kitchen and food business services. • Community Involved in Sustaining Agriculture (CISA) was incorporated in 1999 to serve the Pioneer Valley region and promote agricultural sector. A related entity, PVGrows was launched in 2008 to help connect stakeholders in the local food movement, and has established the PVGrows Loan Fund for local food-related businesses. • Berkshire Grown conducts activities to support and promote local agriculture for Berkshire County.

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Sector Activities	Highlighted Outcomes	Related Recent Activities
Tourism		
<ul style="list-style-type: none"> Activities focused on creating an identity for the region, promoting the region using a coherent strategy, and enhancing activities among the region's tourism councils and agencies. 	<ul style="list-style-type: none"> The "Up Country" brochure was produced and distributed throughout the Northeast, which highlighted arts, outdoor recreation and New England heritage as major themes. The Up Country hot air balloon festival was initiated in Greenfield in 1987. Technical assistance was provided to tourism-related businesses. 	<ul style="list-style-type: none"> See Table 2 for activities in Outdoor Recreation Tourism sector. The Green River Festival held its 27th music and hot air balloon festival at Greenfield Community College in July 2014. A marketing campaign was launched in 2013 for the six designated Western Massachusetts Scenic Byways (including the Mohawk Trail), with coordinated logos, website, brochure, and road signage. To celebrate the 100th anniversary of the Mohawk Trail's scenic designation, tourism councils and associations have a state grant to work collaboratively and promote activities throughout 2014.
Wood Products Industry		
<ul style="list-style-type: none"> Activities focused on studying the potential for more value-added processing and the utilization of low-grade timber, and on connecting industry stakeholders for education and networking. 	<ul style="list-style-type: none"> Studies were conducted to identify industry needs and make recommendations, which were presented at a regional conference. Information sessions and networking events held to connect industry stakeholders. Technical assistance was offered to wood producers and manufacturers. 	<ul style="list-style-type: none"> See Table 2 for activities in Outdoor Recreation Tourism sector. BRPC, FRCOG and other partners are exploring a potential new model of federal designation to support economic development for forestry and recreational tourism as well as conserve private forest land in Northern Tier towns.

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Sector Activities	Highlighted Outcomes	Related Recent Activities
Furniture Industry		
<ul style="list-style-type: none"> • Activities were targeted to the greater Gardner area and focused on improving industry competitiveness, including support for innovation and connecting to wood products industry. 	<ul style="list-style-type: none"> • The Greater Gardner Furniture Association was created. • Efforts to enhance the visibility of the industry in the area. • A feasibility study conducted for a wood products industrial park. 	
Increasing Regional Capacity Strategy		
<ul style="list-style-type: none"> • Activities focused on: increasing access to state & federal resources, promoting new cooperative relationships, and providing a framework & guidelines for other regional economic development efforts. 	<ul style="list-style-type: none"> • The data provided in the Northern Tier study and the unified regional entity helped state funders to target resources to the region. • With the regional scale of implementation, municipalities received a broader spectrum of economic development services than were traditionally achieved at the local level. 	<ul style="list-style-type: none"> • <i>See Table 2 for recent activities in Entrepreneurial Development sector.</i>

Sources: This table has information gleaned from *The Northern Tier Project: A Five Year Summary Report, 1985-1990*, prepared by Mt. Auburn Associations, January 1990. Please go to the Summary Report for comprehensive information about the activities and outcomes conducted. Related Recent Activities were compiled by FRCOG with input by ERNT Project collaborators. Please note that Related Recent Activities is not a comprehensive list of all related economic development efforts conducted or presently underway, but features select activities to provide a sample of the types of activities undertaken.

2004 Northern Tier Report Summary

Building upon this work, then U.S. Congressman John W. Olver commissioned a report on the Northern Tier in 2003. Congressman Olver recognized that this region of his Massachusetts First District continued to consist of communities that were amongst the poorest in the state⁴. This predominantly rural region, described as the Northern Tier, extended from Gardner in Worcester County to Williamstown in Berkshire County along the Route 2 corridor. To address this problem, Congressman Olver secured federal funding to hire the consulting firm of Mt. Auburn Associates to coordinate a steering committee of local and regional business and community leaders, and to develop a plan to foster long-term economic change in the region. From this effort *The Northern Tier Strategic Investment Initiatives Final Report*⁵ was published in October 2004.

The Northern Tier Project had two primary goals: (a) to develop new economic engines and sectors that will lead to a stronger and more dynamic regional economic base; and (b) to establish a skills and training system that will help the region's low-income and working class residents gain access to well-paying jobs. Through an analysis of economic and demographic data, four sectors were chosen to strengthen the region's economic base. They were: The Creative Cluster, Eco-tourism and Outdoor Recreation, Small Growth-oriented Manufacturing, and Renewable & Alternative Energy. To support these sectors, the Project designed an entrepreneurial program and proposed sector-based training program to help grow businesses in these sectors. The study identified recommendations to enhance each of the sectors identified.

These recommendations focused on five specific industry clusters. They were: The Creative Cluster, Ecotourism and Outdoor Recreation, Manufacturing, Renewables, and Healthcare. The study also featured recommendations on how to support entrepreneurial development. Some of these recommendations built upon the work conducted and outcomes of the 1986 Northern Tier Project, while other strategies were not previously addressed. The following table displays the study's recommendations and compares them to recent and current activities that relate to these specific recommendations. Where available hyperlinks to documents posted online or to specific webpages are provided.

⁴ Owen, Aula. "In Massachusetts, 32 of the poorest 50 communities are in the northwest part of the state." *The Recorder* (Greenfield, MA). June 18, 2004.

⁵ Mt. Auburn Associates and Karl Seidman, Deanna Ruffer, John Hoops and Fredia Woolf. *The Northern Tier Strategic Investment Initiatives Final Report*. October 2004.

Table 2: 2004 Northern Tier Study – Recommendations and Activities

Recommendations by Sector	Recent or Current Activities
The Creative Cluster	
<ul style="list-style-type: none"> • Convene an event that brings together the nonprofit cultural institutions, individual artists and performers, and creative businesses operating in the region. • Establish a Northern Tier Creative Cluster Council. • Strengthen and broaden the West County Artists Project. • Promote artisan and crafts-related business development. • Establish the Northern Tier as a Center of Excellence in Cultural Education and Training. • Capitalize on the synergies between the Creative Cluster and other sectors in the region. 	<ul style="list-style-type: none"> • Fostering Art and Culture Partnership established in Franklin County. Sponsored three Creative Economy Summits and is coordinating a fourth Summit for 2015. • Berkshire Creative established and staffed with a director. Sponsors programs and networking events, and maintains an active social media presence to connect those working in the creative economy. • At the state level, the Creative Economy Council and state director position was established in 2009 to support creative industries. Creative Economy Network (CEN) was established in 2013 to coordinate regional creative industry organizations and efforts. There is a CEN established for the Pioneer Valley and for Berkshire County. • In Franklin County, the Crafts of Colrain artist studio tour is in its 12th year and the Shelburne Falls Cultural District was designated in 2011 by the Massachusetts Cultural Council.

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Recommendations by Sector	Recent or Current Activities
Ecotourism and Outdoor Recreation	
<ul style="list-style-type: none"> • Develop more touring and recreation packages in the region. • Explore the idea of new revenue sources (to help fund Ecotourism-related projects). • Convene a Northern Tier Ecotourism Working Group. • Broaden the region’s Ecotourism infrastructure. • Begin an Ecotourism branding campaign in the region. 	<ul style="list-style-type: none"> • A Northern Tier Ecotourism Task Force was created and active for a few years. Sponsored The Great Northern Tier Geocaching Tournament in 2007. A Task Force strategy included the North Quabbin Community Forestry Initiative, which completed the Ecotourism Marketing Report in 2002. • North Quabbin Woods, an initiative of the New England Forest Foundation, was launched to market the region for outdoor recreation and wood products. Marketing materials were created, including a logo, interactive website and recreation guidebook. A storefront to sell local crafts and provide visitor information was staffed in Downtown Orange until 2013. This initiative is now a project of the North Quabbin Community Coalition.
Manufacturing	
<ul style="list-style-type: none"> • Organize a more coordinated effort to ensure that the Northern Tier can take full advantage of the state’s manufacturing- and technology-related resources. • Capitalize on the region’s manufacturing capabilities with the interest in renewable energy and renewable energy products. • Build on and enhance the existing informal manufacturing networks in the region, and consider a more formalized leadership structure. <p>Sector-Based Training –</p> <ul style="list-style-type: none"> • Develop a consortium of the region’s community colleges and technical schools to serve as a focal point for manufacturing training. 	<ul style="list-style-type: none"> • Berkshire Applied Technology Council is a collaboration of employers and educators, which has developed a program that consists of science and math curricula with specialized and industry specific training. • Middle Skills Manufacturing Initiative launched in 2013 offers a CNC precision machining training for adults at the Franklin County Technical High School using advanced equipment, funded by a private-public partnership. • Regional participation in the statewide Amp It Up! Program to promote advanced manufacturing jobs and skills training.

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Recommendations by Sector	Recent or Current Activities
Renewables	
<ul style="list-style-type: none"> • Host a one-day organizing and strategy summit with federal, state, and regional officials, as well as local and regional stakeholders, to capitalize on the wealth of Alternative and Renewable Energy activity occurring in the region. • Create a strong economic development leadership capacity in Renewable Energy in the region. • Develop the region’s role as a leader in Renewable Energy Education and Training. • Position the region as a national Center for Biomass Technology Development. • Investigate the opportunity to develop Greenfield as a regional manufacturing and distribution hub for renewable energy. • Explore the potential of the region’s hydropower facilities and capacity. 	<ul style="list-style-type: none"> • The Northern Tier Energy Sector Partnership was a two-year green jobs training program and collaboration-building project coordinated by FHREB with stakeholders from Berkshire, Franklin and Worcester Counties. • Green Careers Pathways Project was a green career coaching program by the FHREB, continued online through an updated resource directory. • Berkshire Community College (BCC) launches the Green Business Program certificate program • Greenfield Community College (GCC) launches a program developed to clean/sustainable energy, which includes one of the first renewable energy/energy efficiency program certificate programs.

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Recommendations by Sector	Recent or Current Activities
Entrepreneurial Development	
<p>Establish a Northern Tier Economic Gardening Program, that includes:</p> <ul style="list-style-type: none"> - An Information Technology service; - A database network of industry experts; - Market development services; - A regional matching grant pool for growing entrepreneurs; - An active business outreach program; and - Two new staff positions to oversee and administer this program. 	<ul style="list-style-type: none"> • Economic Resiliency in the Northern Tier initiative led by FCCDC with BRPC, FRCOG and additional collaborators and stakeholders. Expanding business assistance capacity in northern Berkshire and Franklin County. • In 2005, the FCCDC received an US Small Business Administration grant for its economic gardening project to provide direct technical assistance to businesses. FCCDC continues to provide direct business technical assistance and operate a business lending program, as well as the Food Processing Center. • Berkshire Enterprises offers small business management and entrepreneurship programs. • Massachusetts Small Business Development Center Network provides direct technical assistance to small businesses.
Sector-Based Training – Healthcare	
<ul style="list-style-type: none"> • Develop an industry-cluster approach to healthcare training. • Establish a regional Healthcare Education Consortium that includes the region’s three public higher educational institutions and vocational technical schools. 	<ul style="list-style-type: none"> • In 2013, the Berkshire County Regional Employment Board, Inc. received a grant to fund the Healthcare PACE (Partners Achieving Career Enrichment) project, to enhance career pathways in the health care field

Source: Recommendations are from *The Northern Tier Strategic Investment Initiatives Final Report*, prepared by Mt. Auburn Associations, October 2004. The Related Recent Activities were compiled by FRCOG with input by the ERNT Project collaborators. Please note that Related Recent Activities is not a comprehensive list of all related economic development efforts conducted or presently underway, but features selected activities to provide a sample of the types of activities undertaken.

III. REPORTS & STUDIES OF THE NORTHERN TIER

As seen in the previous section, a number of economic development efforts have been initiated in the region that relate to strategies identified in previous Northern Tier studies. In the later years, most of these efforts were specific to county borders or organizational service areas. There are some exceptions, such as the Northern Tier Clean Energy Sector Partnership which targeted the Northern Tier region from northern Worcester County to northern Berkshire County. However, most projects were specific to geographic boundaries related to the implementing organization or funding sources. Part of the mission of the ERNT Project is to breakdown boundaries and support increased collaboration among organizations in the Northern Tier corridor.

The following table is an inventory of documents that relate to economic development initiatives undertaken for the Northern Tier or for sub-regions of the Northern Tier. Hyperlinks are included to connect to the source material posted online. The intention is that by sharing these documents and making them accessible to multiple stakeholders, it will encourage this work to be built upon in the future.

Table 3: Northern Tier Related Reports & Studies

Year	Title	Description
1986	The Northern Tier Economy: A Strategic Analysis	A report by Mt. Auburn Associates and an advisory committee that examined the economy and made recommendations for the region extending from Gardner to the western border of Franklin County
1990	The Northern Tier Project: A Five Year Summary Report, 1985-1990	A report prepared by Mt. Auburn Associates that reviews the activities and outcomes of the Northern Tier Project.
2001	The North Quabbin Community Forestry Initiative – Ecotourism Marketing Report	Study completed by Cynthia Barstow of environmental marketing and the Ecotourism Marketing Team task force
2002	Mohawk Trail Scenic Byway Corridor Management Plan – West	Plan for portion of the Mohawk Trail scenic byway from Greenfield to Williamstown by the BRPC and FRCOG
2002	Strategies for Ecotourism Development in the North Quabbin	Recommendations report of the North Quabbin Ecotourism Task Force and Cynthia Barstow

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Year	Title	Description
2002	Williamstown Master Plan	A master plan to serve as a decision-making guide for local officials in Williamstown.
2003	The Charlemont Master Plan	A master plan for the Town of Charlemont with chapter updates.
2004	Northern Tier Strategic Investment Initiatives Report	A report prepared by Mt. Auburn Associates and an advisory task force that examined the economy and made recommendations for the region from Gardner to Williamstown.
2006	Rural Clusters of Innovation: Business Strategy Project	Economic strategy report led by Berkshire Economic Development Corporation with Monitor Company Group LLP.
2006	Berkshire Compact for Higher Education	Effort to assess and develop goals on how higher education in Berkshire County can meet future needs.
2007	Berkshire Creative Economy: A Report to the Berkshire Economic Development Corporation	Prepared by Mt. Auburn Associates, this report provides information about the Creative Economy sector and offers strategic initiatives to create a more robust sector.
2007	Berkshire Blueprint: A Shared Economic Vision and Plan for Action	A roadmap for the future of the Berkshire economy, published by the Berkshire Economic Development Corporation.
2009	Mohawk Trail Scenic Byway Corridor Management Plan – East	Plan for Mohawk Trail scenic byway from Athol to Greenfield by FRCOG.
2009	Impact of Non-Profit Sector in Berkshire County	Study of the economic impact of the non-profit sector commissioned by Berkshire Chamber of Commerce.
2011	Berkshire Region Comprehensive Economic Development Strategy (CEDS) Report	Annual economic development strategy report for Berkshire County by BRPC.

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Year	Title	Description
2012	Franklin-Hampshire Workforce Area: Labor Market Blueprint	Regional workforce assessment by LMI Works for FHREB.
2012	Labor Market Trends in the Berkshire Region	Berkshire market study by New England Public Policy Center of the Boston FED.
2012	Labor Market Trends in the Pioneer Valley Region	Pioneer Valley labor market study by New England Public Policy Center of the Boston FED.
2013	Comprehensive Sustainable Master Plan for the Town of Greenfield	A master plan for guiding sustainable community development for the next 10-20 years in Greenfield.
2013	Downtown Turners Falls Livability Plan	A downtown plan for the Turners Falls area in the Town of Montague.
2013	Sustainable Franklin County	Regional sustainability plan for Franklin County by FRCOG.
2013	Pioneer Valley Small Business Growth Study	Study of business growth through data analysis and business interviews for three counties of Pioneer Valley.
2013	Recent Labor Market Conditions in Berkshire County	Overview of recent labor market conditions in Berkshire County and sub-regions.
2013	Western Massachusetts Scenic Byways	Website that highlights the seven designated scenic byways of western Massachusetts.
2014	A Master Plan for Northfield	A master plan for the Town of Northfield.
2014	Greater Franklin County Comprehensive Economic Development Strategy (CEDS) Report	Annual economic development strategy report for Franklin County by FRCOG.
2014	North Adams Vision 2030	A comprehensive plan to guide the growth of the City of North Adams over the next twenty years.
2014	Sustainable Berkshires Plan	Regional sustainability plan for Berkshire County by BRPC.

Source: Compiled by the Franklin Regional Council of Governments and Berkshire Regional Planning Commission with input by ERNT Project collaborators.

IV. ECONOMIC CLUSTERS

Past Northern Tier studies identified key clusters in the region to target for economic development initiatives. A definition by Michael Porter of the Harvard Business School states that “clusters are groups of interconnected firms, suppliers, related industries, and specialized institutions that arise in particular locations.”⁶ Cluster development as a strategy for promoting economic development has been of increasing focus by local and federal initiatives.⁷ This strategy encourages regions to identify clusters that are active and have a distinct advantage by being there (such as the superior soils of the Connecticut River valley are intrinsic advantage to the agricultural industry). The clusters’ characteristics are assessed and needs or opportunities that will strengthen the businesses in this cluster are identified. For example, if there is a shared need by businesses in a cluster for a specific skill set, a targeted workforce training program can be developed. Initiatives that raise a cluster’s profile can encourage similar and complementary businesses to start-up and can also help attract public and private investment to the region. Identifying and nurturing clusters that sells goods or services outside of a region will bring dollars into the region. They become economic drivers for the region and make it more economically competitive.

The Northern Tier, as defined by the ERNT project, includes 41 cities and towns located in Berkshire, Franklin and Worcester Counties⁸. There are data sets on resident workers by industry at the municipal level, but not data sets about industry clusters and how they compare to national trends. These types of data sets only offer county-level data as the smallest geographic level. As a result, the cluster analysis data used for this project is for Berkshire County and Franklin County, which includes areas in the center and southern areas of Berkshire County and excludes North Quabbin towns in Worcester County. While this data does not directly correspond to the Northern Tier as defined by this project, this data is seen as representative of the region.

Both the two-county region and the ERNT Project region share characteristics that make it different from the state as a whole. Both regions experience population loss and a decline in the size of the labor force. Both regions experience slightly higher rates of poverty as well as considerably lower wage and income rates than compared to the state. Also, these regions are significantly more rural than the state, which creates challenges for businesses as well as for public services. The following table presents some selected data points to highlight these differences.

⁶ Porter, Michael. “Frameworks & Key Concepts.” Harvard Business School’s Institute for Strategy and Competitiveness. <http://www.isc.hbs.edu/competitiveness-economic-development/frameworks-and-key-concepts/Pages/default.aspx>

⁷ “Q&A: The Role of Clusters in Enhancing U.S. Competitiveness.” <http://www.eda.gov/news/blogs/2013/06/01/qa.htm>

⁸ A list of the 41 cities and towns with selected data is included in the Appendix.

Table 4: Population and Economic Data

	Northern Tier Region¹	Berkshire and Franklin Counties	Massachusetts
Number of Cities & Towns	41	52	351
2004 Total Population Estimate	130,558	203,935	6,451,279
2012 Total Population Estimate	128,279	201,556	6,646,144
% 2004-2012 Population Change	-1.2%	-1.7%	3.0%
2012 Population Density per Square Mile (land area only)	111	123	848
2004 Labor Force	69,338	111,715	3,380,600
2012 Labor Force	67,774	110,146	3,473,383
% 2004-2012 Labor Force Change	-2.3%	-2.2%	2.7%
2008-2012 ACS Per Capita Income (total population/aggregate income)	\$27,650	\$28,904	\$35,485
2008-2012 ACS Poverty Rate	11.8%	12.2%	11.0%
2012 Average Weekly Wage	\$696	\$750	\$1,171

¹ As defined by the ERNT Project to include northern Berkshire County, Franklin County, and the North Quabbin communities of Worcester County.

Sources: U.S. Census Bureau, Population Estimates Division; MassGIS Land Use Data, 2005; U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics, 2014; U.S. Census Bureau, 2008-2012 American Community Survey (ACS) 5-Year Estimates; Commonwealth of Massachusetts, ES-202 Employment & Wages Report, 2013.

In the regional economy, small business has a large role. According to County Business Patterns⁹, 88% of private-sector employers in Berkshire and Franklin Counties had less than 20 employees in 2012. This was slightly higher than the state average of 85%. While data from the Non-employer Statistics¹⁰ program shows a growing number of self-employed workers. In 2012, there were 31,124 non-employer establishments in Berkshire and Franklin Counties, which was a 1.2% increase from 2004. Seeing the prevalence of small business, efforts that target support to create and grow small businesses in the region is an important economic development strategy.

There are multiple sources for industry data at the county level, such as employment figures in the agriculture or manufacturing industries. However, clusters consist of select fields from multiple industries. For example, the processing of local vegetables into value-added products is in the manufacturing industry but would be part of an agri-business cluster that includes farm production and food processing. To measure economic activity in clusters, first the industries that make up these clusters must be defined. From there, data can be assembled to provide employment and income data.

To help measure clusters, the EDA has funded two projects with online tools that define and measure important clusters. One tool is titled the US Cluster Mapping Project¹¹,

⁹ U.S. Census Bureau's County Business Patterns, <http://www.census.gov/econ/cbp/index.html>.

¹⁰ U.S. Census Bureau's Non-employer Statistics, <http://censtats.census.gov/cgi-bin/nonemployer/nonsect.pl>

¹¹ Website: <http://www.clustermapping.us/>

which was created by the Harvard Business School's Institute for Strategy & Competiveness. This online tool has defined both traded and local clusters, and provides cluster-specific data on employment, wages, and job creation at the county level. The online tool allows users to create their own regions by combining counties.

The tool measures the overall economic performance and drivers of a region (wages, employment, innovation, productivity, etc.) as well as its cluster portfolio. Traded and local clusters are differentiated in this tool. Businesses in a "traded" cluster primarily sell their products outside of their home region, thus generating economic activity from outside dollars. Businesses in a "local" cluster primarily sell products within in their region, which generates economic activity within the region. The online tool is able to produce a summary of these performance and drivers and traded cluster portfolio for a combined region consisting of Berkshire and Franklin Counties.

Chart 1. US Cluster Mapping: Performance and Drivers,

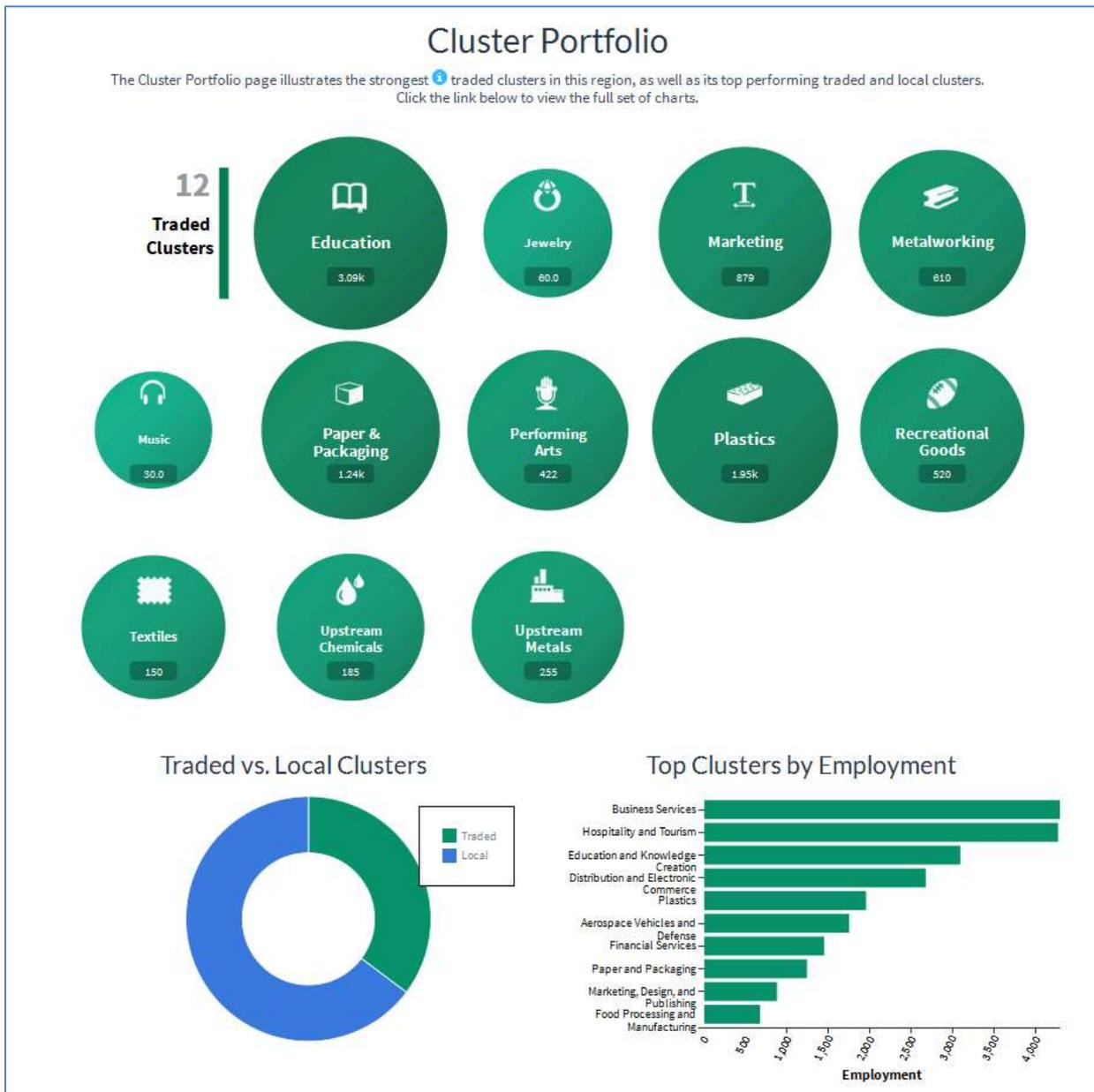


Source: US Cluster Mapping, Region Dashboard for Berkshire & Franklin Counties, MA

According to the US Cluster Mapping Dashboard for the combined region, the metrics that measure prosperity and wealth show positive growth from 1998 to 2012. However, while there has been growth during this period, the relative prosperity and wages for this region are in the third or fourth quintile compared to other counties across the country. In terms of employment, the metrics indicate a worsening situation with higher rates of unemployment and a loss of total employment in the region.

The Dashboard also identified the top clusters by employment for this combined region. Some of these clusters corresponded to clusters identified in past Northern Tier studies and some did not. For example, the Performing Arts, Music, and Jewelry traded clusters relate to The Creative Cluster identified in the 2004 Northern Tier study. Metalworking is another top traded cluster identified by the Dashboard that is also in both previous Northern Tier studies. Traded clusters, such as Education and Plastics, were not identified as key clusters in the Northern Tier studies.

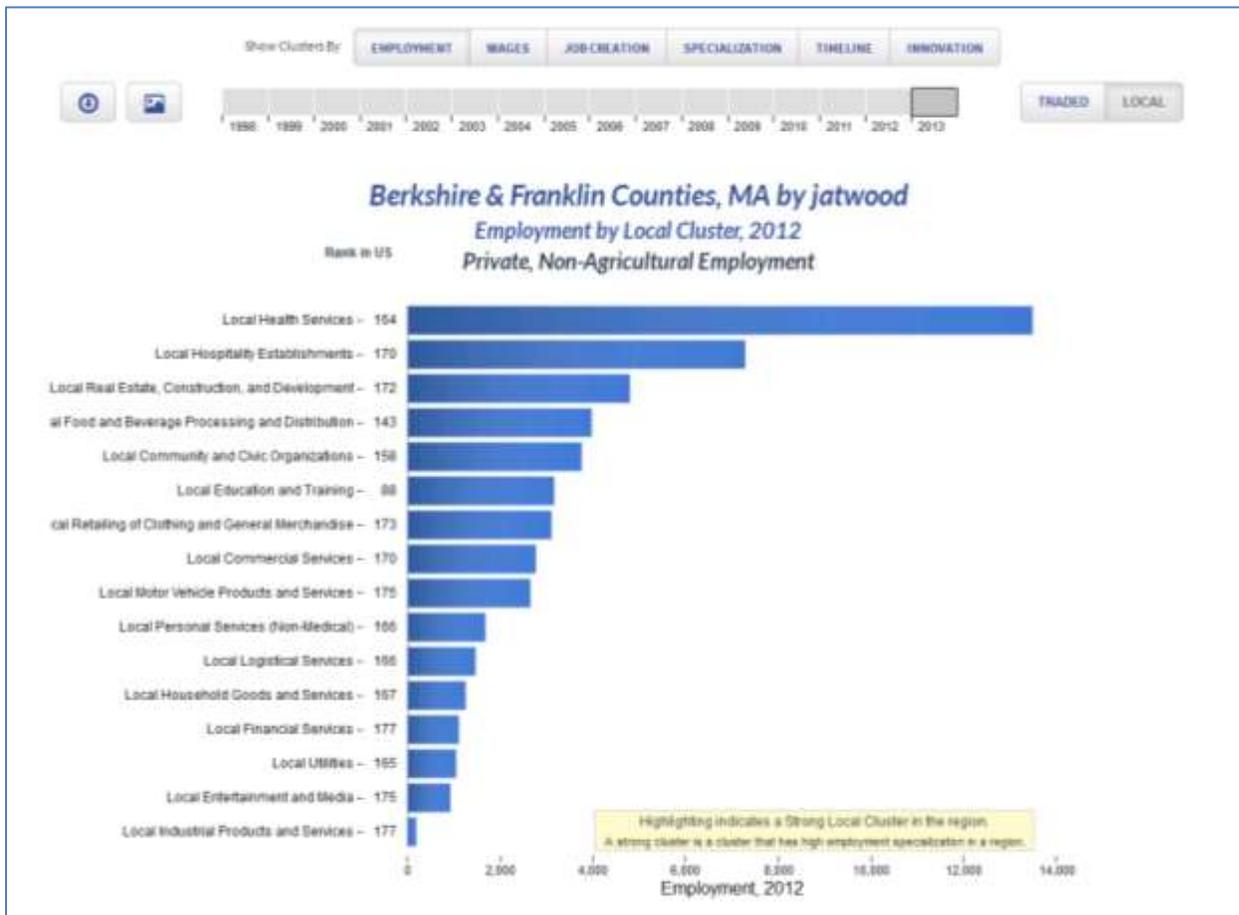
Chart 2. US Cluster Mapping: Traded Cluster Portfolio



Source: US Cluster Mapping, Region Dashboard for Berkshire & Franklin Counties, MA

For comparison, the following chart depicts the portfolio of Local Clusters for the two-county region. Again, businesses in Local Clusters primarily sell products within in their respective region. These clusters are predominantly service based and found in regions across the country, such as health services and education.

Chart 3. US Cluster Mapping: Local Cluster Employment



Source: US Cluster Mapping, Region Dashboard for Berkshire & Franklin Counties, MA

Another EDA funded project to measure clusters is the STATS America’s Innovation in American Regions¹² online tool, which provides data about specific innovation clusters using location quotient data for employment and wages. A location quotient (LQ) is used to measure the significance of a cluster in a region in comparison to other geographic areas. The LQ data in this online tool demonstrates the concentration of employment, establishments or wages in a particular region’s cluster in comparison to the national average. For example, Franklin County’s LQ of 1.37 for the Agribusiness, Food Processing & Technology cluster is greater than 1.0, which indicates a concentration in Franklin County that is higher than the national average.

STATS America was created through the Innovation in America Regions project, funded by the EDA and implemented by the Purdue Center for Regional Development at Indiana University. The tool has defined its own innovation clusters and produces data about them at the county and state level. These innovation clusters are similar to U.S. County Business Pattern industries, but are grouped in specific categories, such as Agri-

¹² Website: <http://www.statsamerica.org/innovation/anydata/>

business, Food Processing & Technology which combines both farming and food processing into one cluster.

Measuring Northern Tier Clusters

The 1986 and 2004 Northern Tier studies targeted specific clusters for economic development. Some clusters overlapped from one study to the next, such as manufacturing; while others did not, like the Creative Cluster. The US Cluster Mapping Project and the STATS America tools define their clusters differently. Neither tool will necessarily encompass all possible industries and workers in a particular cluster. For the purposes of this report, clusters that are most representative of the clusters identified in the Northern Tier studies were used.

Table 5: Comparison of Clusters from STATS America & Northern Tier Studies

1986 Northern Tier Study Identified Cluster	2004 Northern Tier Study Identified Cluster	STATS America Innovation Cluster
Specialty Food Industry	Manufacturing	Agribusiness, Food Processing & Technology
	The Creative Cluster; Ecotourism & Outdoor Recreation	Arts, Entertainment, Recreation & Visitor Industries
	Renewables	Energy (Fossil & Renewable)
Wood Products Industry; Furniture Industry	Manufacturing	Forest & Wood Products
Metalworking Sector	Manufacturing	Fabricated Metal Product Manufacturing; Machinery Manufacturing

Source: STATS America’s Innovation in American Regions, www.statsamerica.org/innovation/anydata/
 The clusters in the STATS America database were defined by the Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University, and other public and private research partners. The data used to report on clusters comes from the U.S. Bureau of Labor Statistics’ Quarterly Census of Employment & Wages (QCEW) Program. The QCEW Program uses information from state and federal unemployment insurance programs. It is estimated that this data covers 97% of all wage and salary civilian employment in the country.¹³ This data does not include self-employed workers as well as most agricultural workers on small farms. As a result, the number of individuals working in a specific cluster may be under-reported. For example, individual writers or artists who are self-employed may not be captured in the Arts, Entertainment, Recreation & Visitor Industries cluster. Similarly with the Agribusiness, Food Processing & Technology cluster, agricultural workers on small farms may be not be captured in this data.

¹³ According to U.S. Bureau of Labor Statistics’ Quarterly Census of Employment and Wages Program website, <http://www.bls.gov/cew/cewfaq.htm#Q01>.

The following pages depict data for all clusters in Berkshire County and Franklin County from 2004 through 2012. From a national perspective, this period included a time of economic growth (from 2004 to 2006) as well as the Great Recession (2007-2009) followed by a slow economic recovery (2010-2012). A comparison of the beginning and the end of this nine-year term indicates a period of relative economic stagnation. However, the year by year data depicts a fluctuation in establishments, employment and annual payroll.

For the Northern Tier region, as well as both individual counties, there was a modest increase in the number of establishments, a slight decline in employment, and a large increase in annual wages from 2004 to 2012. However, this increase in annual wages can be misleading. When factoring the steady rate of inflation during this period, the increase in wages can be off set by inflation or may even indicate a decline in total wages. To give an overall sense of inflation during this period, \$1.00 in 2004 was equal to \$1.22 in 2012 or a 22% increase.¹⁴ Included in the following description of trends is a comparison of the annual wages from 2004 in 2012 dollars.

¹⁴ U.S. Bureau of Labor Statistics, Consumer Price Index (CPI) Calculator.
http://www.bls.gov/data/inflation_calculator.htm.

All Industries Data

This information reflects trends from 2004-2012 for all industries and not just the 22 clusters defined by STATS America for the combined region of Berkshire and Franklin Counties (i.e. the Northern Tier) and for the two counties individually. In each of these geographic areas, the total number of establishments increased slightly, but the overall number of employed decreased. Also during this period, the total amount of annual wages increased as well. However, when using comparative dollars¹⁵, the actual value of these wages decreased.

NORTHERN TIER 2004-2012 TRENDS

- ↑ Number of establishments increased by 3% (+182)
- ↓ Employment decreased by -3% (-2,349)
- ↑ Annual wages increased by 13% (+\$383 million)
- ↓ In comparative 2012 dollars, annual wages decreased by -7% (-\$259 million)

BERKSHIRE COUNTY 2004-2012 TRENDS

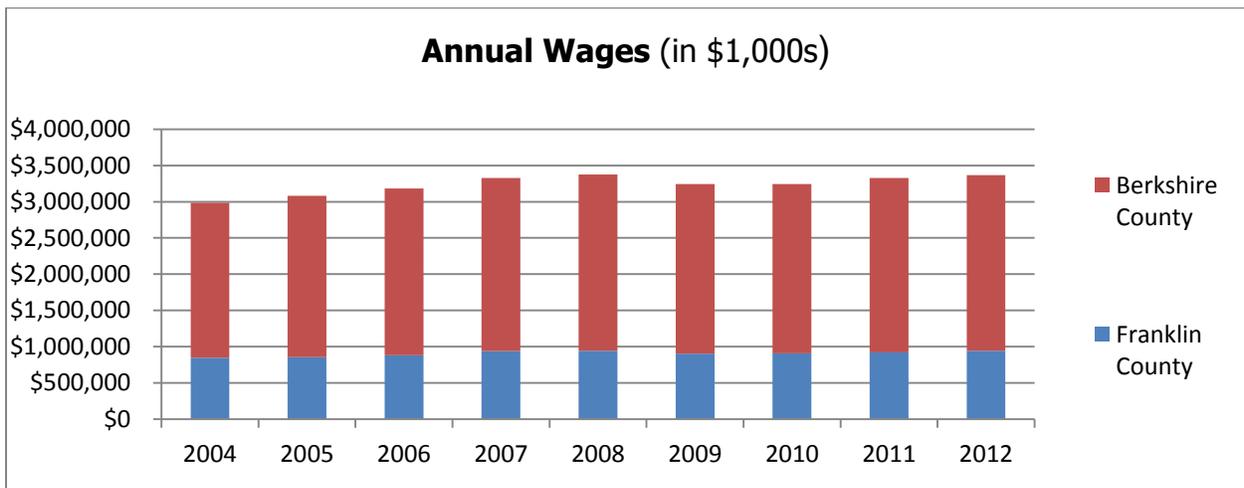
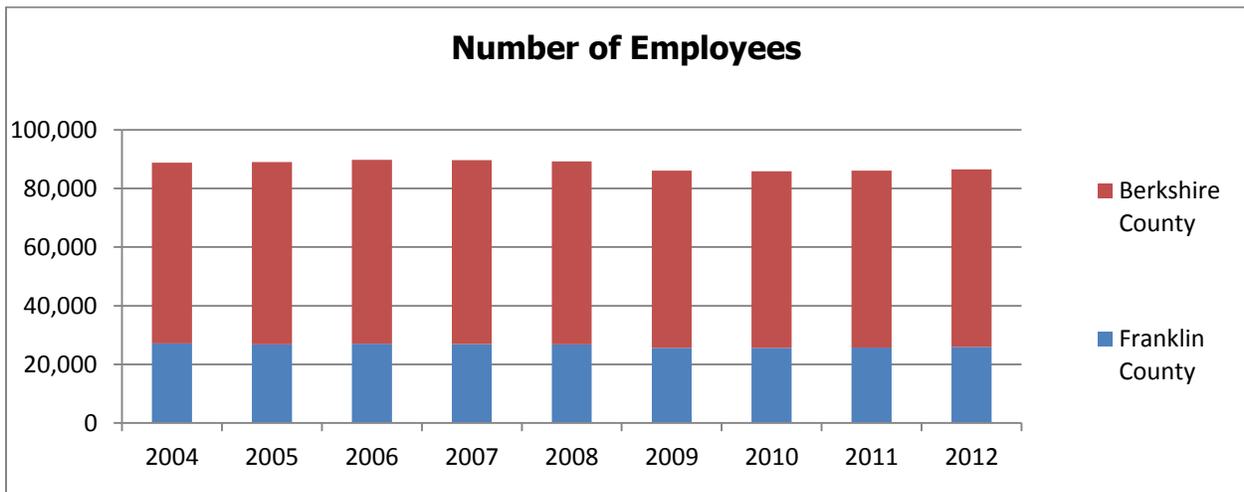
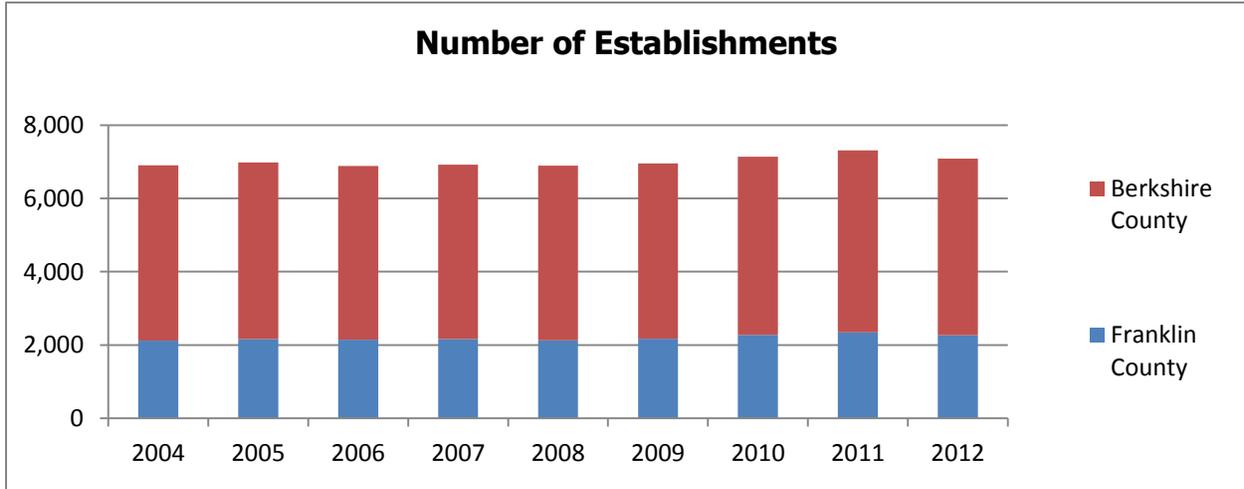
- ↑ Number of establishments increased by 1% (+32)
- ↓ Employment decreased by -2% (-1,133)
- ↑ Annual wages increased by 13% (+\$283 million)
- ↓ In comparative 2012 dollars, annual wages decreased by -7% (-\$176 million)

FRANKLIN COUNTY 2004-2012 TRENDS

- ↑ Number of establishments increased by 7% (+150)
- ↓ Employment decreased by -4% (-1,216)
- ↑ Annual Wages increased by 12% (+\$99 million)
- ↓ In comparative 2012 dollars, annual wages decreased by -8% (-\$82 million)

¹⁵ The value of annual wages in 2004 was calculated in 2012 dollars using the U.S. Bureau of Labor Statistics, Consumer Price Index (CPI) Calculator. http://www.bls.gov/data/inflation_calculator.htm.

All Industries continued.



Source: STATS America's Innovation in American Regions, www.statsamerica.org/innovation/anydata/

Agribusiness, Food Processing & Technology Cluster

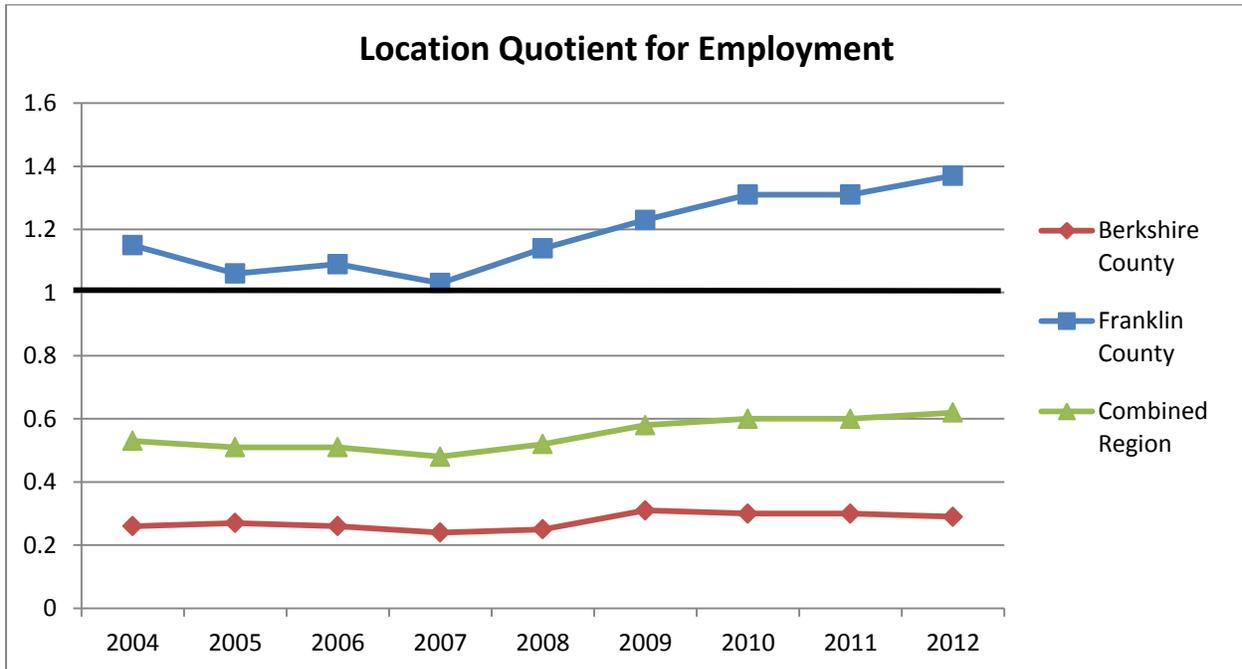
Employment growth in this cluster in recent years has been modest in Berkshire County and significant in Franklin County, with Franklin County experiencing an increasingly higher concentration of employment in this cluster than the nation in recent years.

EMPLOYMENT LOCATION QUOTIENT (LQ) TREND

- ◀ Combined region LQ less than 1.0
- ◀ Berkshire County LQ less than 1.0
- > Franklin County LQ greater than 1.0
- ↔ Region employment LQ was relatively stable with some growth (from 0.53 in 2004 to 0.62 in 2012)

REGIONAL TRENDS

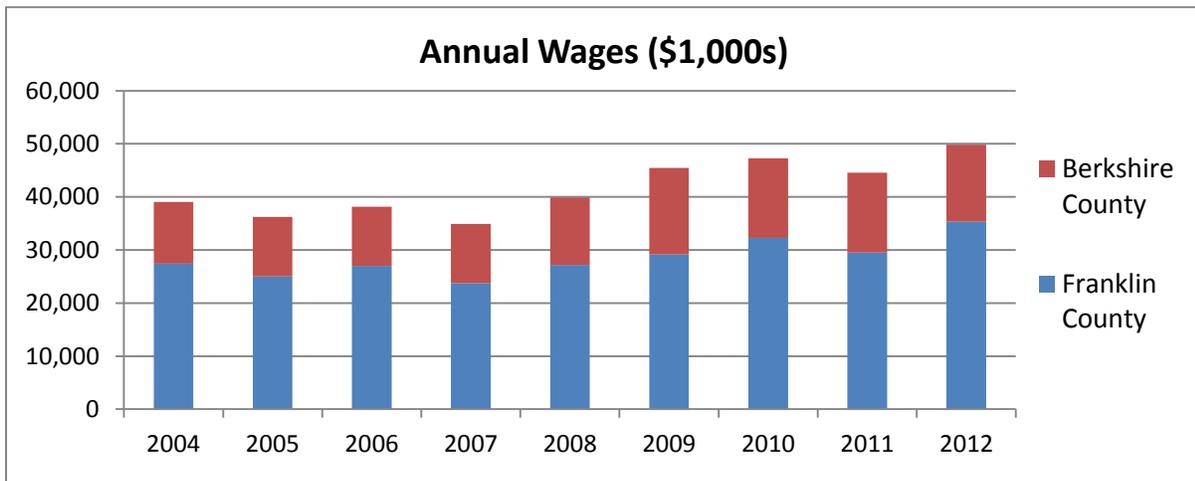
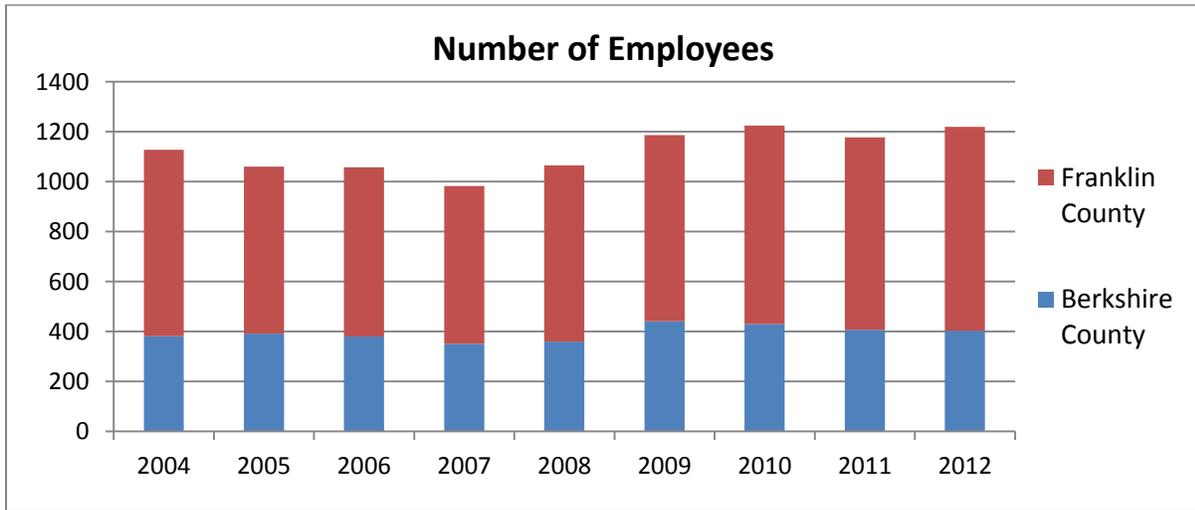
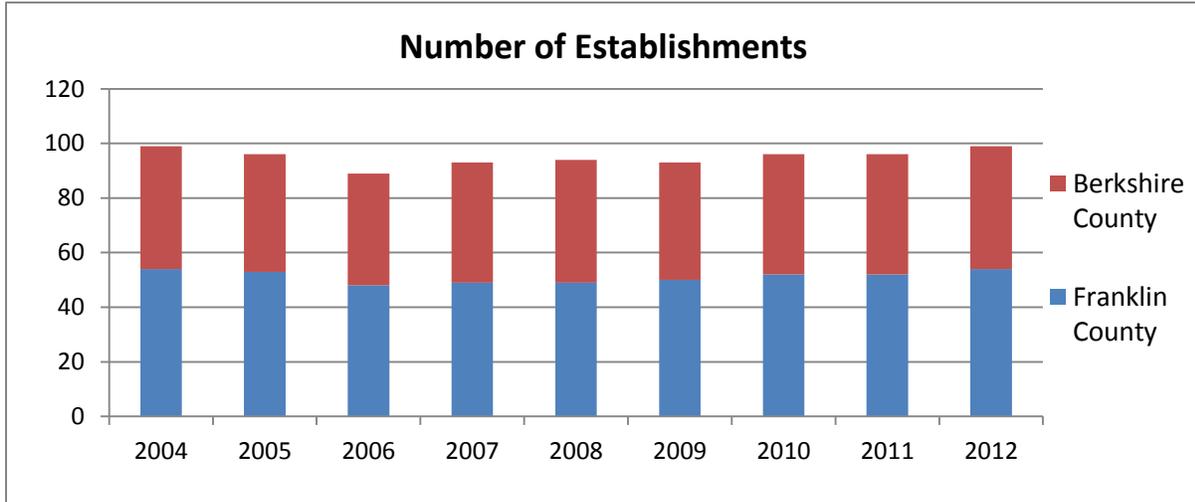
- ↔ Number of establishments remained relatively stable (0)
- ↑ Employment increased (+91)
- ↑ Annual Wages increased (+\$10.8 million)
- ↑ In comparative 2012 dollars, annual wages increased by 5% (+\$2.4 million)



Note: This location quotient (LQ) is measuring the significance of a cluster in a specific area in comparison to the national average (which is this graph equals 1.0).

Sources: STATS America's Innovation in American Regions, www.statsamerica.org/innovation/anydata/; U.S. Bureau of Labor Statistics, Consumer Price Index (CPI) Calculator, http://www.bls.gov/data/inflation_calculator.htm.

Agribusiness, Food Processing & Technology Cluster continued.



Source: STATS America's Innovation in American Regions, www.statsamerica.org/innovation/anydata/

Arts, Entertainment, Recreation & Visitor Industries Cluster

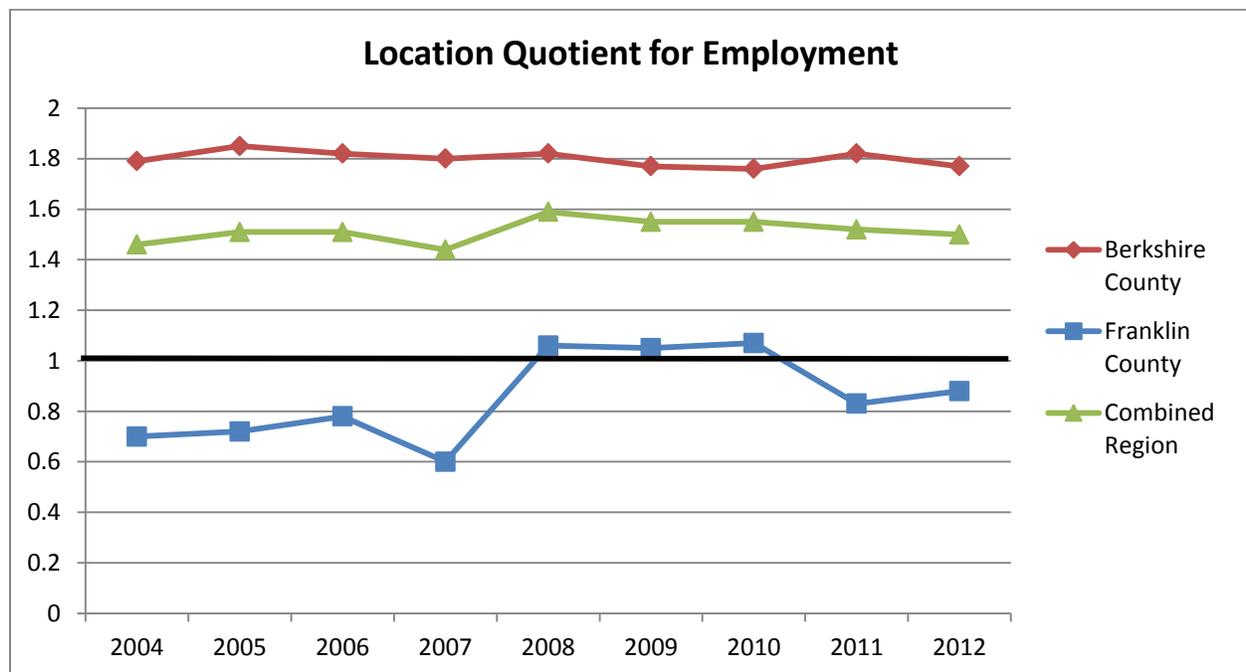
Employment in this cluster has been relatively consistent over the past nine years for the combined region, with Berkshire County having a consistently higher concentration of employment in this cluster than the nation.

EMPLOYMENT LOCATION QUOTIENT (LQ) TREND

- > Combined region LQ greater than 1.0
- > Berkshire County LQ greater than 1.0
- < Franklin County LQ mostly less than 1.0
- ↔ Employment LQ remained relatively stable (from 1.46 in 2004 to 1.52 in 2012)

REGIONAL TRENDS

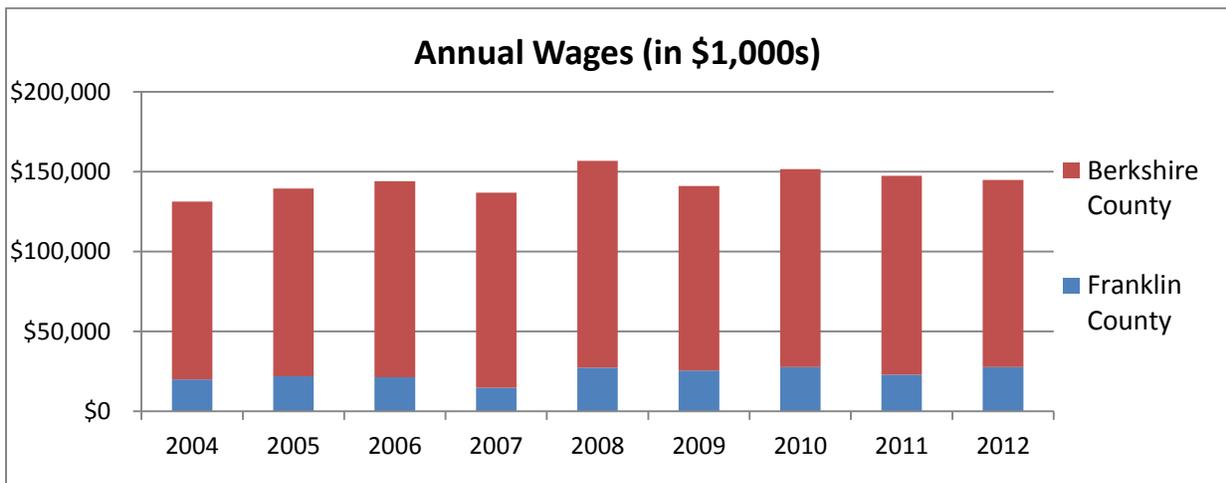
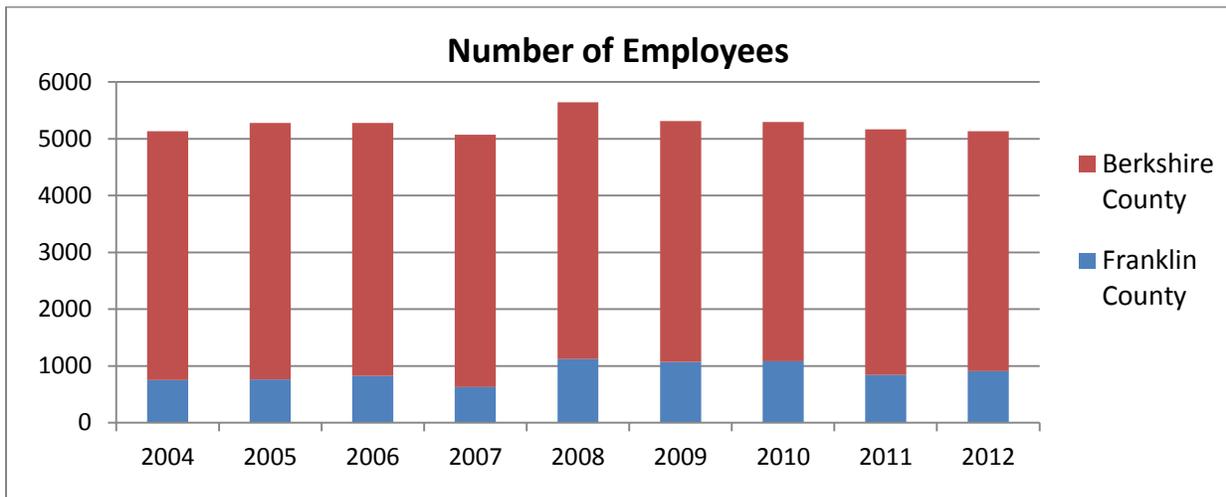
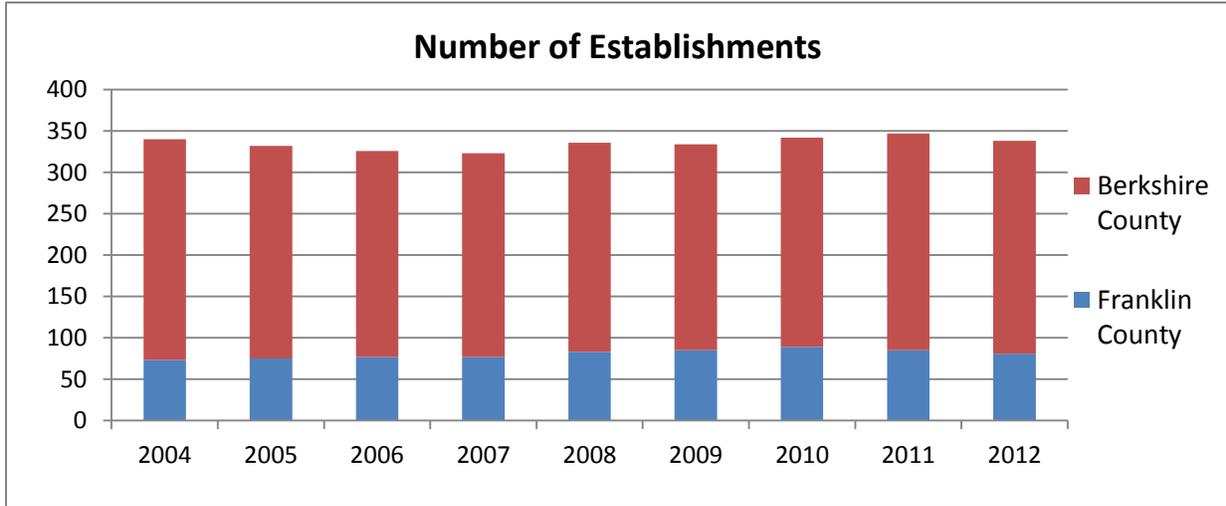
- ↔ Number of establishments remained relatively unchanged (-2)
- ↔ Employment remained relatively unchanged (+3)
- ↑ Annual Wages increased by 10% (+\$13.5 million)
- ↓ In comparative 2012 dollars, annual wages decreased by -9% (-\$14.7 million)



Note: This location quotient (LQ) is measuring the significance of a cluster in a specific a in comparison to the national average (which is this graph equals 1.0).

Sources: STATS America's Innovation in American Regions, www.statsamerica.org/innovation/anydata/;
 U.S. Bureau of Labor Statistics, Consumer Price Index (CPI) Calculator,
http://www.bls.gov/data/inflation_calculator.htm.

Arts, Entertainment, Recreation & Visitor Industries Cluster continued.



Source: STATS America's Innovation in American Regions, www.statsamerica.org/innovation/anydata/

Forest and Wood Products Cluster

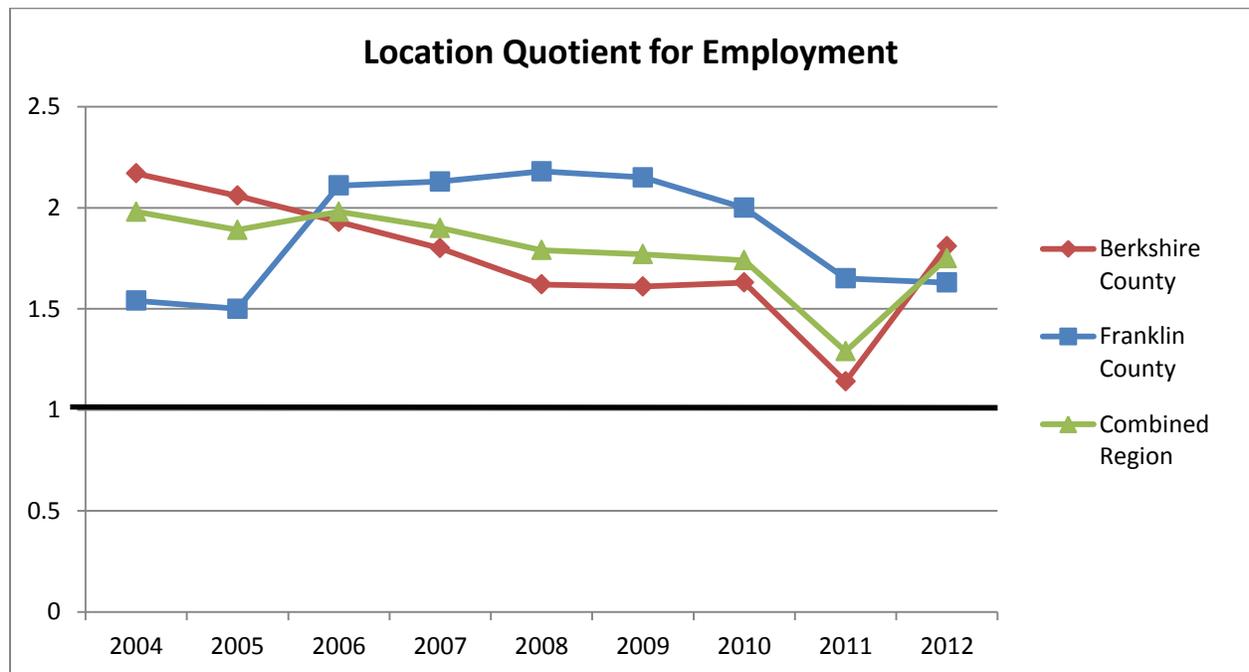
The cluster had been in steady decline in establishments, employment and wages from 2004 through 2011, with 2012 experiencing an increase. Despite this trend, the cluster has had a consistent higher concentration of employment in the region than the nation.

EMPLOYMENT LOCATION QUOTIENT (LQ) TREND

- > Combined region LQ greater than 1.0
- > Berkshire County LQ greater than 1.0
- > Franklin County LQ greater than 1.0
- ↓ Employment LQ decreased with some recovery in recent years (from 1.98 in 2004 to 1.75 in 2012)

REGIONAL TRENDS

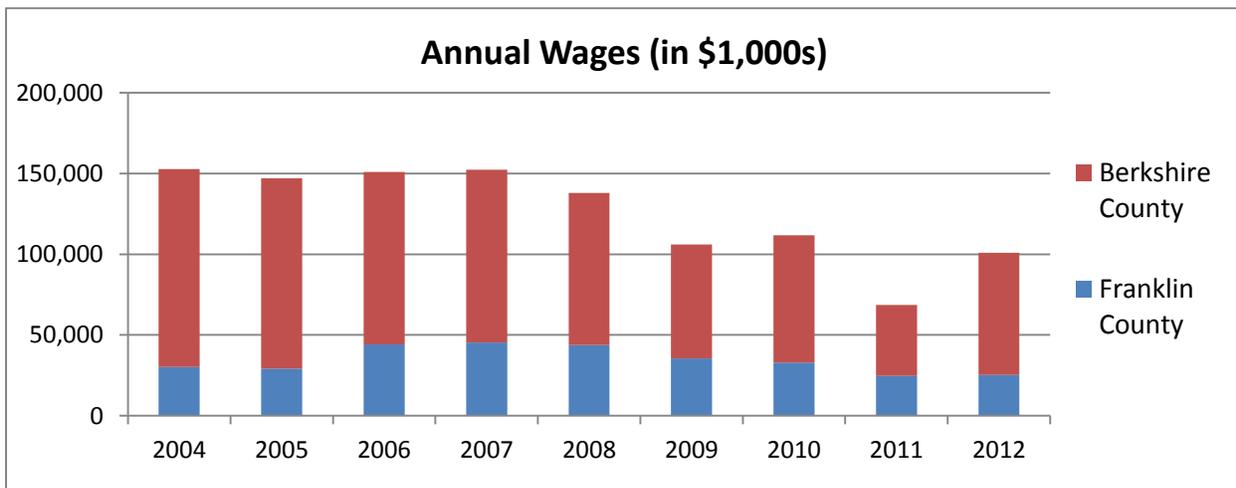
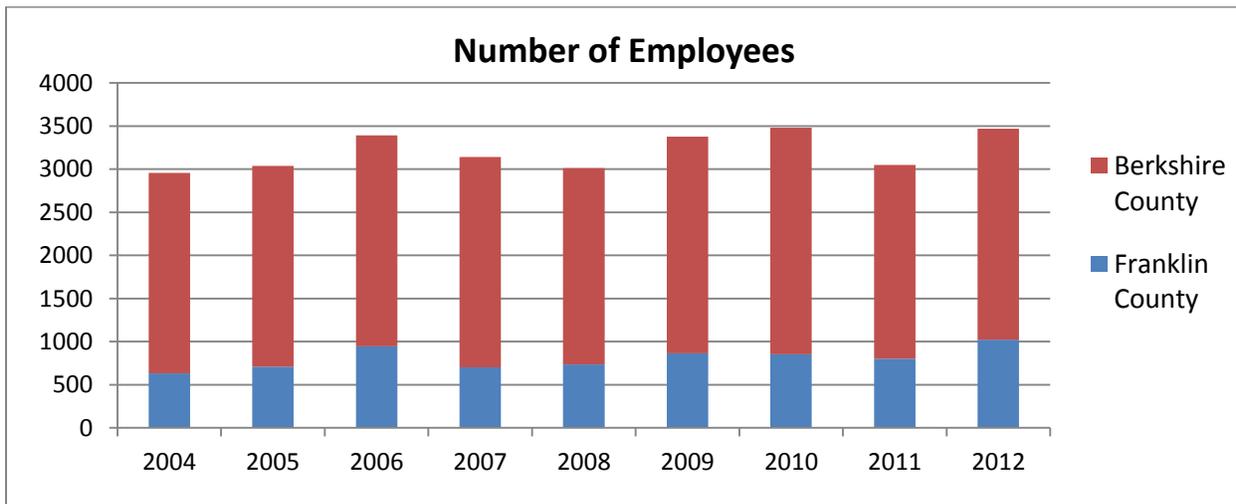
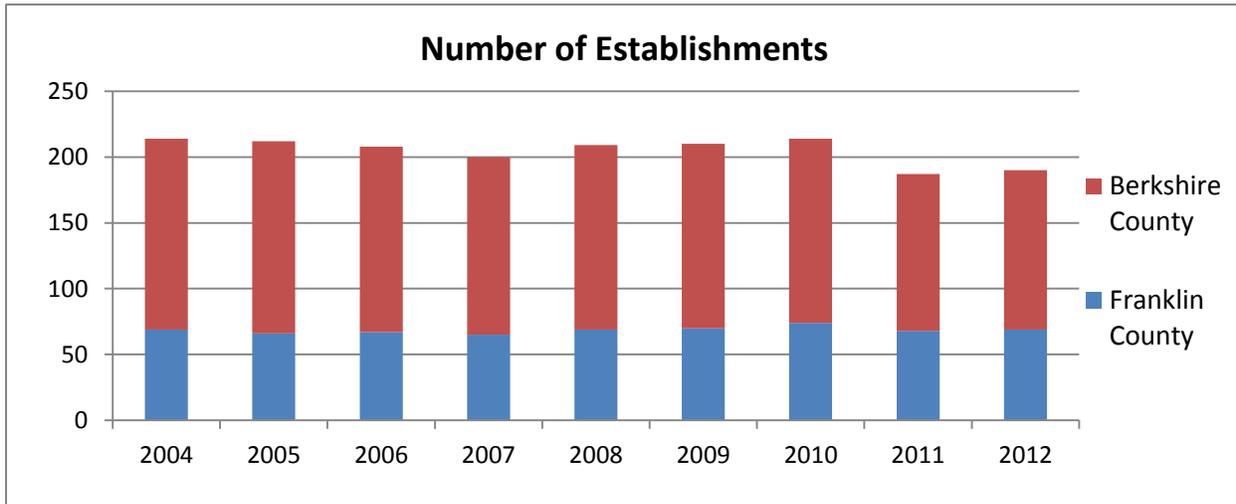
- ↓ Number of establishments decreased by -44% (-34)
- ↓ Employment declined significantly by -48% (-1,277)
- ↓ Annual Wages decreased by -34% (-\$51.8 million)
- ↓ In comparative 2012 dollars, annual wages decreased by -46% (-\$84.7 million)



Note: This location quotient (LQ) is measuring the significance of a cluster in a specific area in comparison to the national average (which is this graph equals 1.0).

Sources: STATS America's Innovation in American Regions, www.statsamerica.org/innovation/anydata/; U.S. Bureau of Labor Statistics, Consumer Price Index (CPI) Calculator, http://www.bls.gov/data/inflation_calculator.htm.

Forest and Wood Products Cluster continued.



Source: STATS America's Innovation in American Regions, www.statsamerica.org/innovation/anydata/

Energy (Fossil & Renewable) Cluster

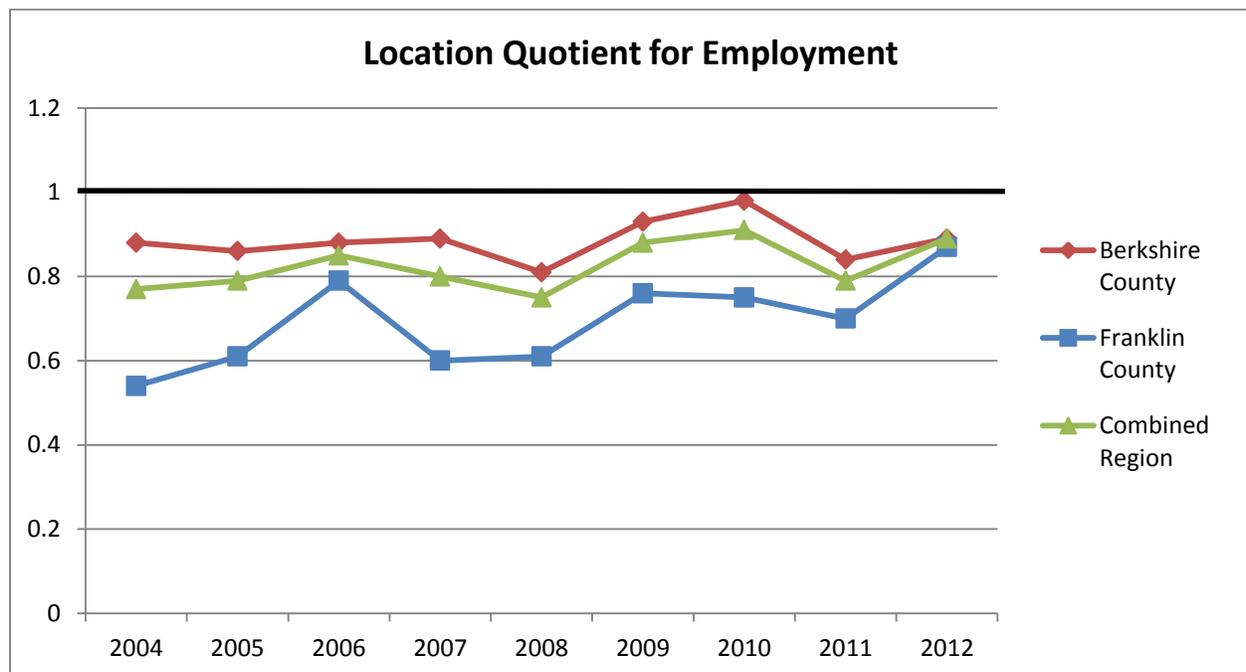
While there has been a decline in establishments, employment and wages has increased. In comparison to other areas of the country (particularly those areas with a strong fossil-based energy sub-sector), this region has a lower concentration of employment in this cluster. Renewable energy only sub-sector data is not available.

EMPLOYMENT LOCATION QUOTIENT (LQ) TREND

- ◀ Combined region LQ less than 1.0
- ◀ Berkshire County LQ less than 1.0
- ◀ Franklin County LQ less than 1.0
- ↔ Employment LQ remained relatively stable (from 0.77 in 2004 to 0.89 in 2012)

REGIONAL TRENDS

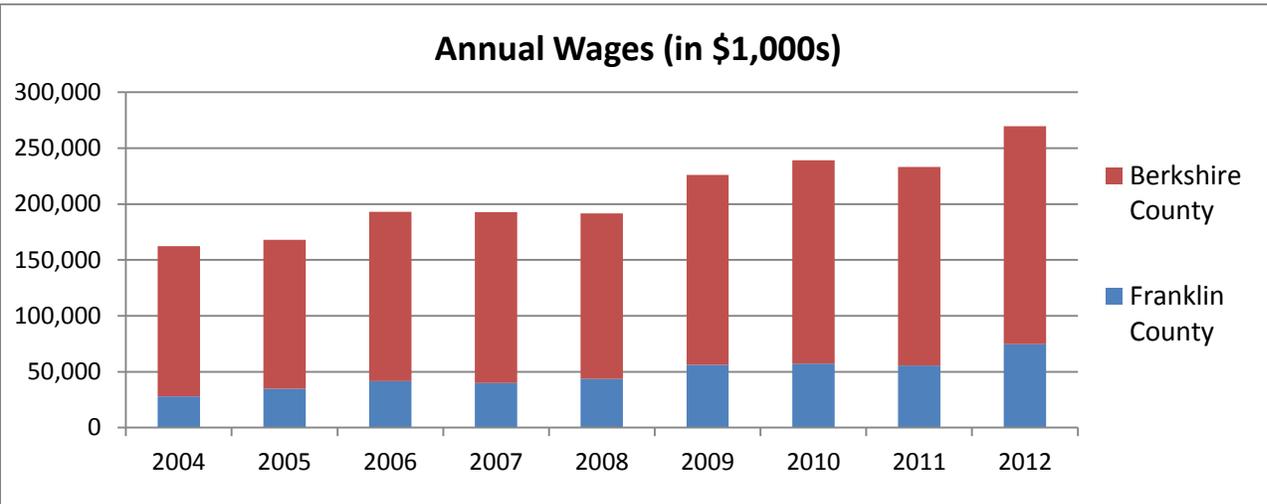
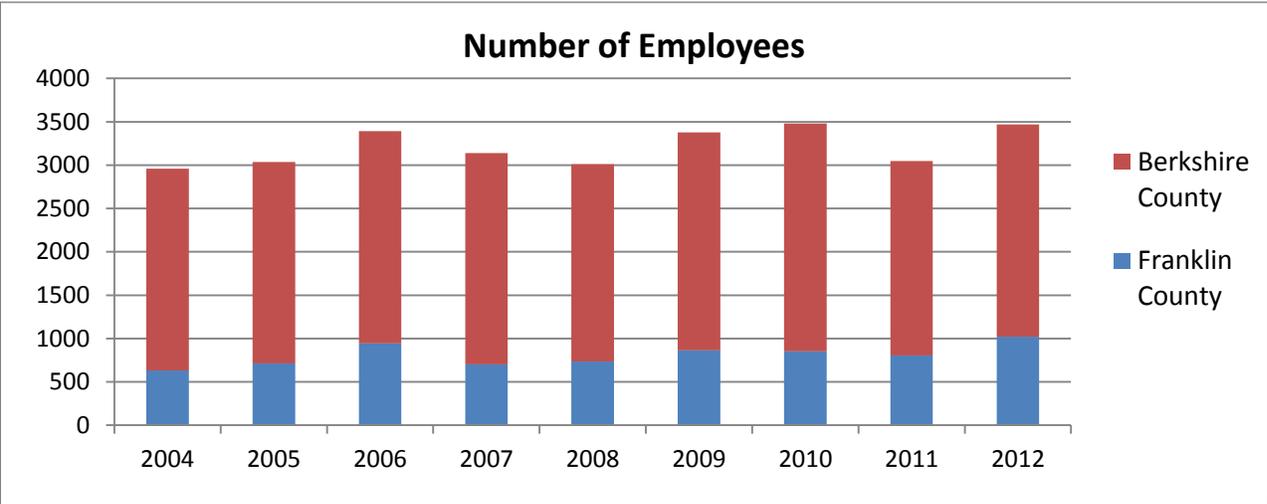
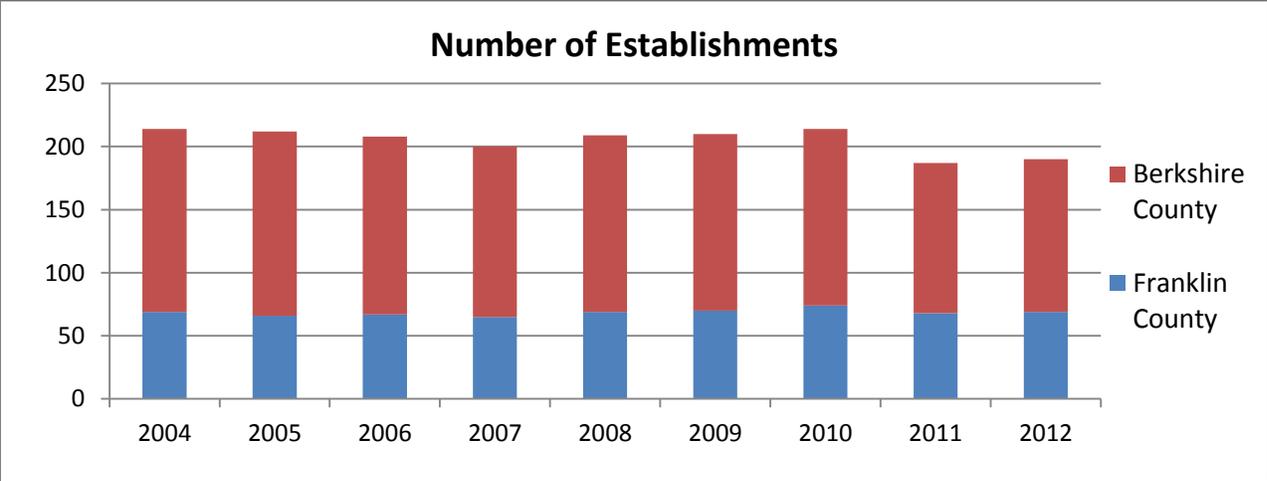
- ↓ Number of establishments decreased by -11% (-24)
- ↓ Employment increased by 17% (+510)
- ↑ Annual Wages increased by 66% (+\$107.2.8 million)
- ↑ In comparative 2012 dollars, annual wages increased by 37% (+\$72.2 million)



Note: This location quotient (LQ) is measuring the significance of a cluster in a specific area in comparison to the national average (which is this graph equals 1.0).

Sources: STATS America's Innovation in American Regions, www.statsamerica.org/innovation/anydata/; U.S. Bureau of Labor Statistics, Consumer Price Index (CPI) Calculator, http://www.bls.gov/data/inflation_calculator.htm.

Energy (Fossil and Renewable) Cluster continued.



Source: STATS America’s Innovation in American Regions, www.statsamerica.org/innovation/anydata/

Manufacturing Super-Sector Cluster

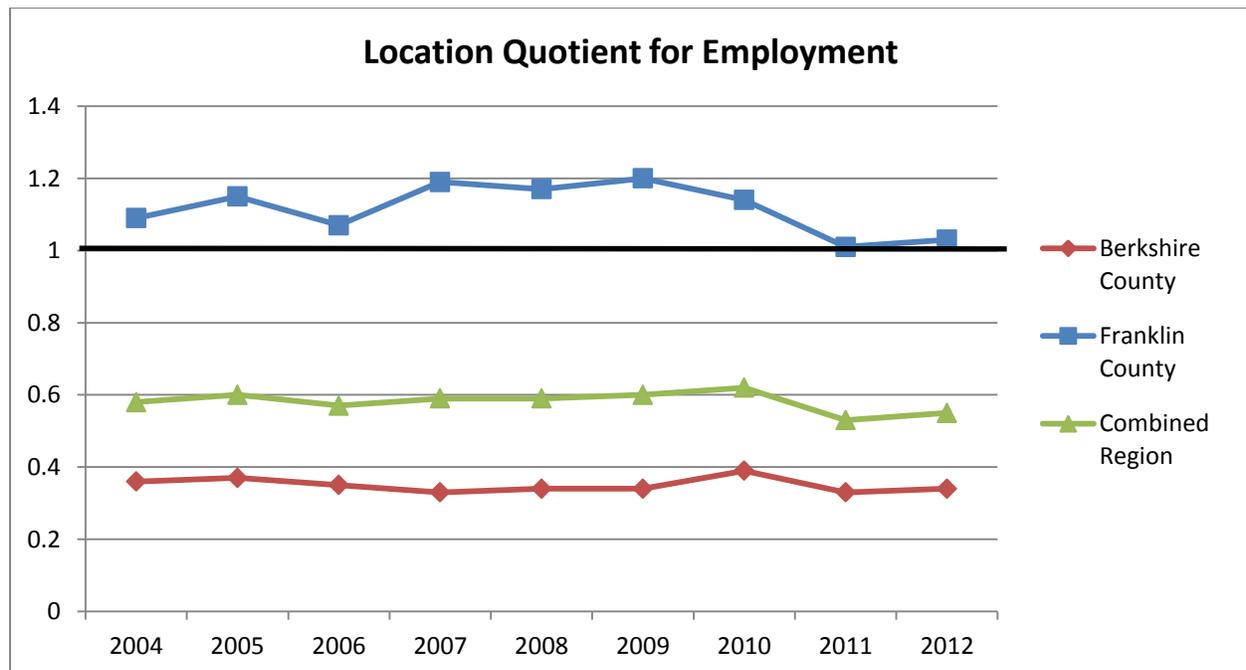
From 2004 to 2011, there has been a steady decline in establishments and employment, with a recent increase in 2012. In comparison to other areas of the country, Franklin County has slightly higher concentration of employment in this cluster with Berkshire County having a much lower concentration.

EMPLOYMENT LOCATION QUOTIENT (LQ) TREND

- ◀ Combined region LQ less than 1.0
- ◀ Berkshire County LQ less than 1.0
- ▶ Franklin County LQ slightly greater than 1.0
- ↔ Region employment LQ remained relatively stable (from 0.58 in 2004 to 0.55 in 2012)

REGIONAL TRENDS

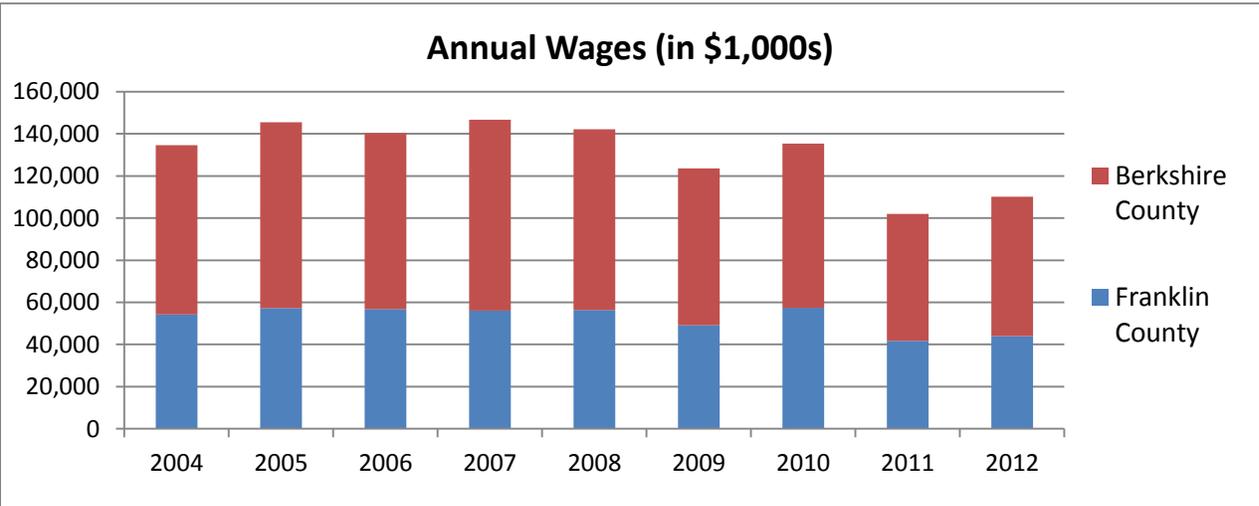
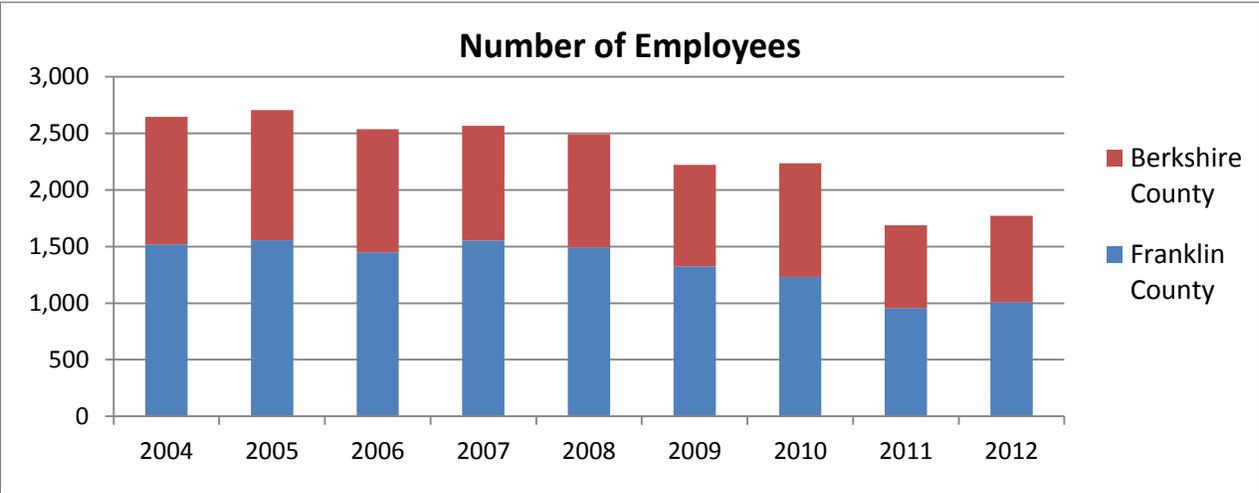
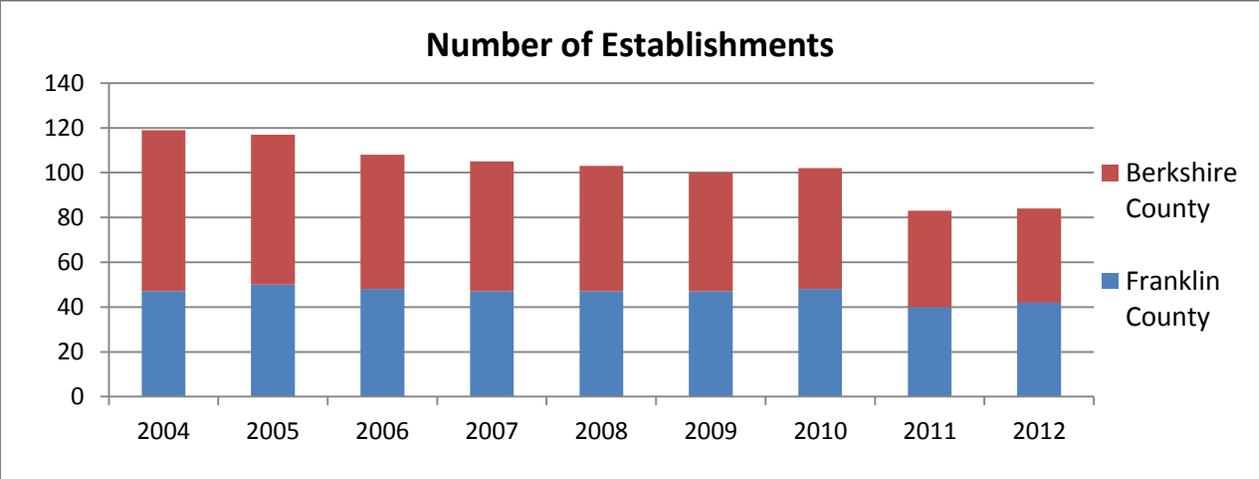
- ↓ Number of establishments declined significantly by -29% (-35)
- ↓ Employment decreased significantly by -33% (-873)
- ↓ Annual Wages decreased by -18% (-\$24.3 million)
- ↓ In comparative 2012 dollars, annual wages increased by -33% (-\$53.3 million)



Note: This location quotient (LQ) is measuring the significance of a cluster in a specific area in comparison to the national average (which is this graph equals 1.0).

Sources: STATS America's Innovation in American Regions, www.statsamerica.org/innovation/anydata/; U.S. Bureau of Labor Statistics, Consumer Price Index (CPI) Calculator, http://www.bls.gov/data/inflation_calculator.htm.

Manufacturing Super-Sector Cluster continued.



Source: STATS America’s Innovation in American Regions, www.statsamerica.org/innovation/anydata/

Manufacturing – Fabricated Metal Products Cluster

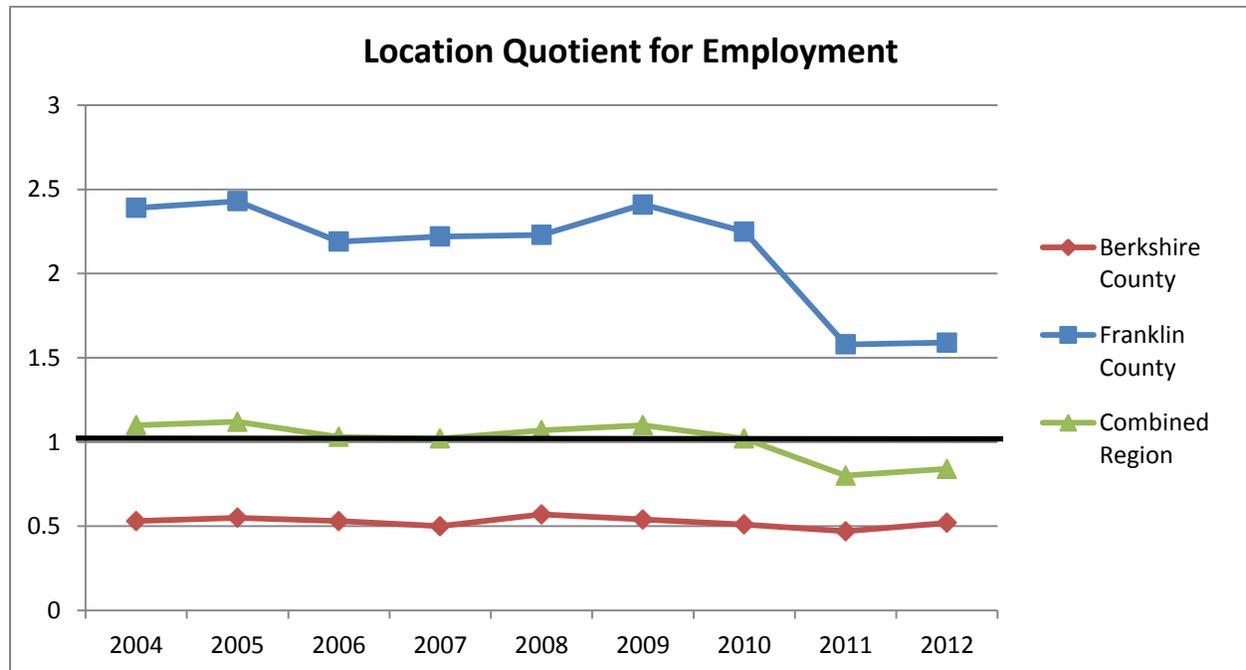
After the recession, there was a decline in establishments, employment and wages, with a recent increase beginning in 2012. In comparison to other areas of the country, Franklin County has a significantly higher concentration of employment in this cluster with Berkshire County having a much lower concentration.

LOCATION QUOTIENT (LQ) TREND

- Combined region LQ approximately 1.0
- ◀ Berkshire County LQ less than 1.0
- ▶ Franklin County LQ greater than 1.0
- ↔ Region employment LQ declined (from 1.1 in 2004 to 0.84 in 2012)

REGIONAL TRENDS

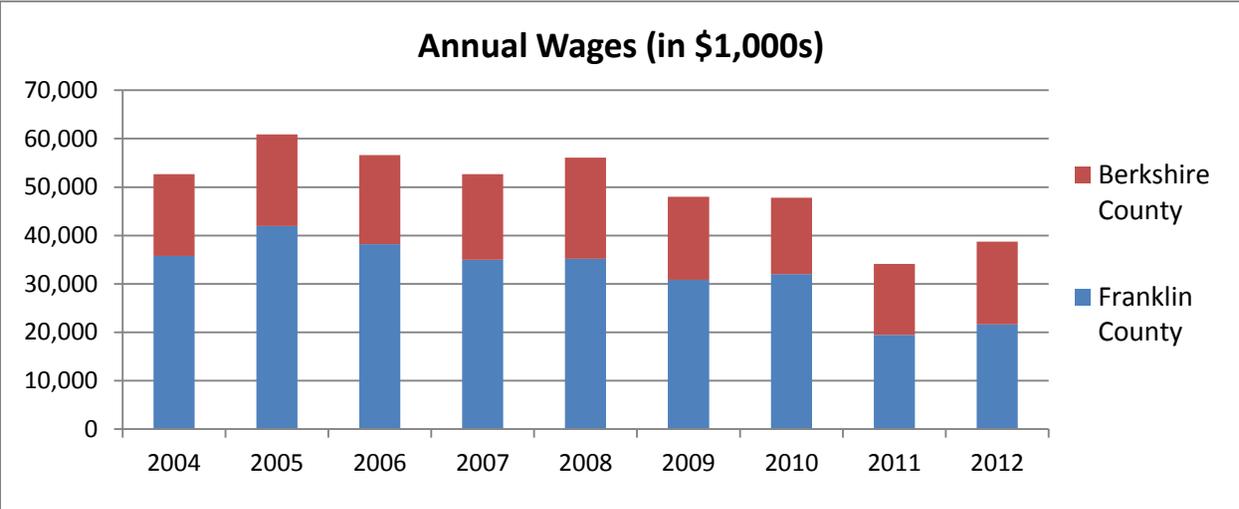
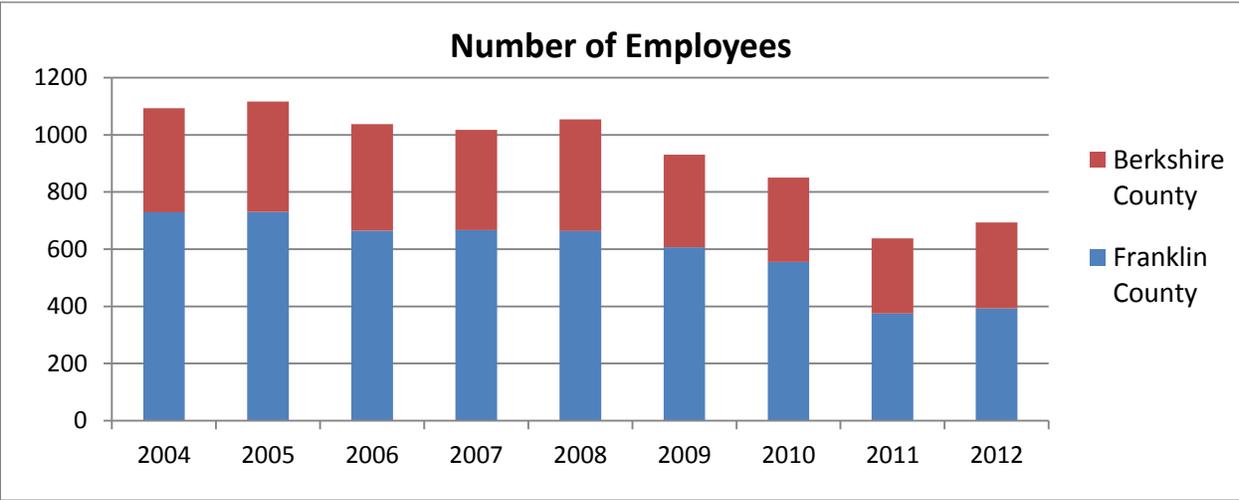
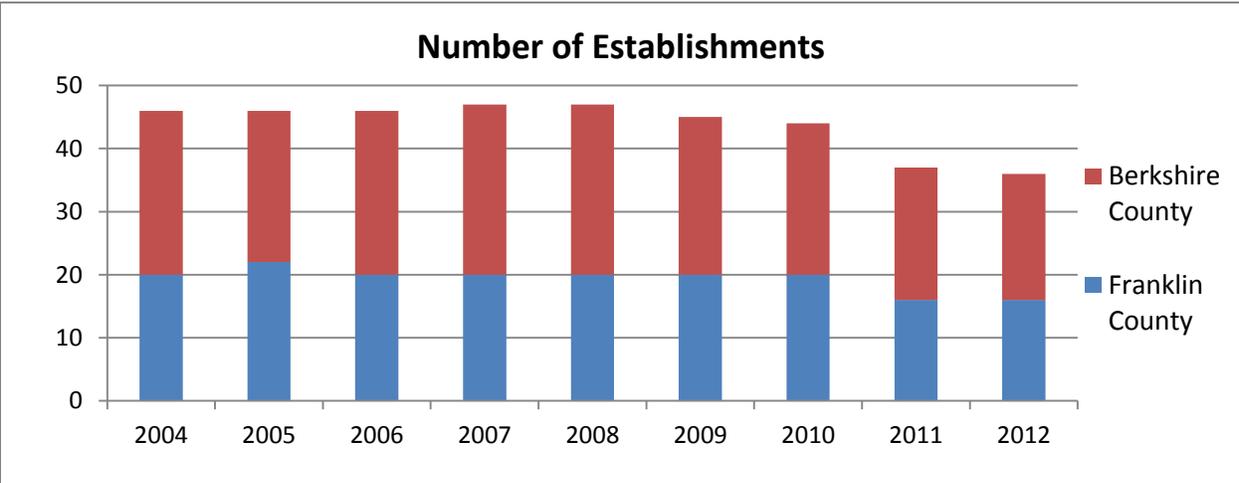
- ↓ Number of establishments decreased by -22% (-10)
- ↓ Employment decreased significantly by -37% (-400)
- ↓ Annual Wages decreased significantly by -27% (-\$13.9 million)
- ↓ In comparative 2012 dollars, annual wages decreased by -40% (-\$25.3 million)



Note: This location quotient (LQ) is measuring the significance of a cluster in a specific area in comparison to the national average (which is this graph equals 1.0).

Sources: STATS America's Innovation in American Regions, www.statsamerica.org/innovation/anydata/; U.S. Bureau of Labor Statistics, Consumer Price Index (CPI) Calculator, http://www.bls.gov/data/inflation_calculator.htm.

Manufacturing – Fabricated Metal Products Cluster continued.



Source: STATS America’s Innovation in American Regions, www.statsamerica.org/innovation/anydata/

Manufacturing – Machinery Cluster

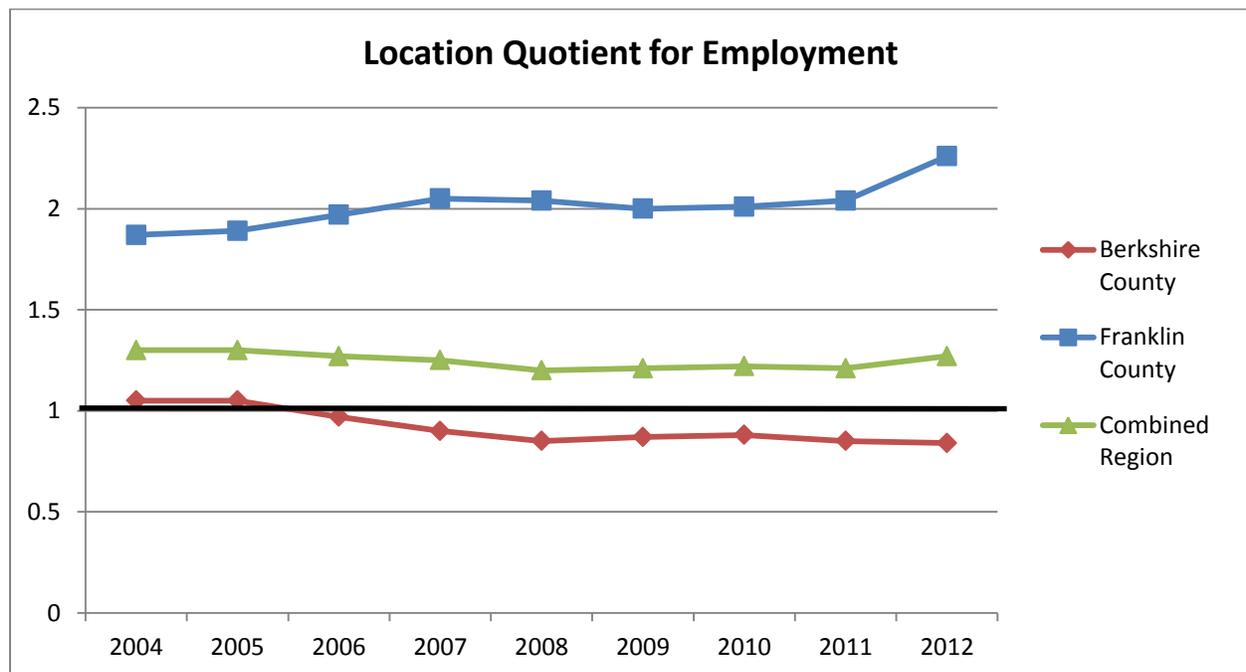
After the recession, there was a decline in establishments, employment and wages, with a recent increase beginning in 2012. In comparison to other areas of the country, Franklin County has a significantly higher concentration of employment in this cluster with Berkshire County having a much lower concentration.

EMPLOYMENT LOCATION QUOTIENT (LQ) TREND

- Combined region LQ approximately 1.0
- Berkshire County LQ less than 1.0
- Franklin County LQ greater than 1.0
- Region employment LQ remained stable (from 1.3 in 2004 to 1.27 in 2012)

REGIONAL TRENDS

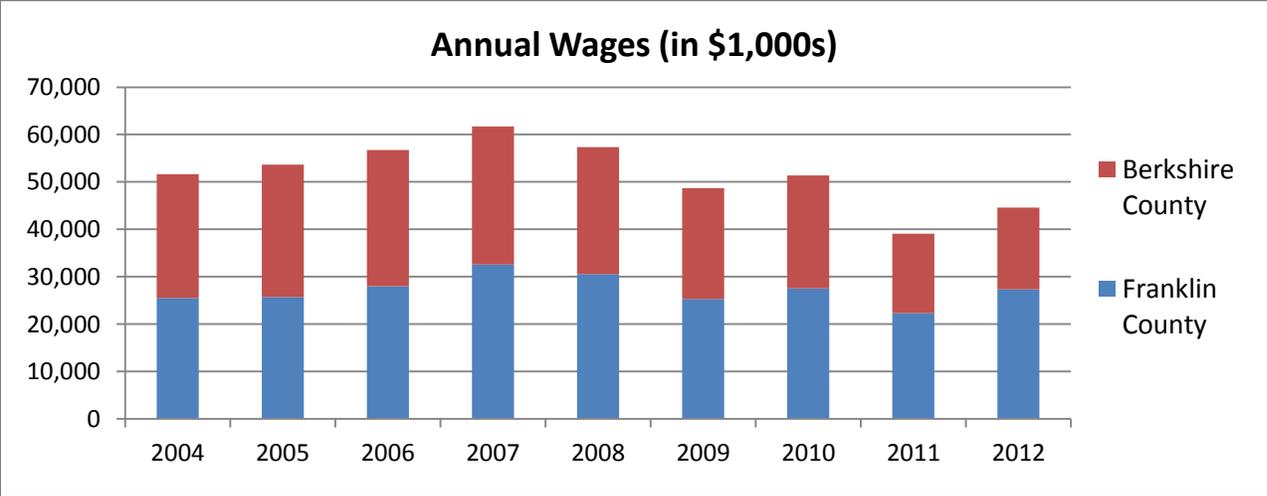
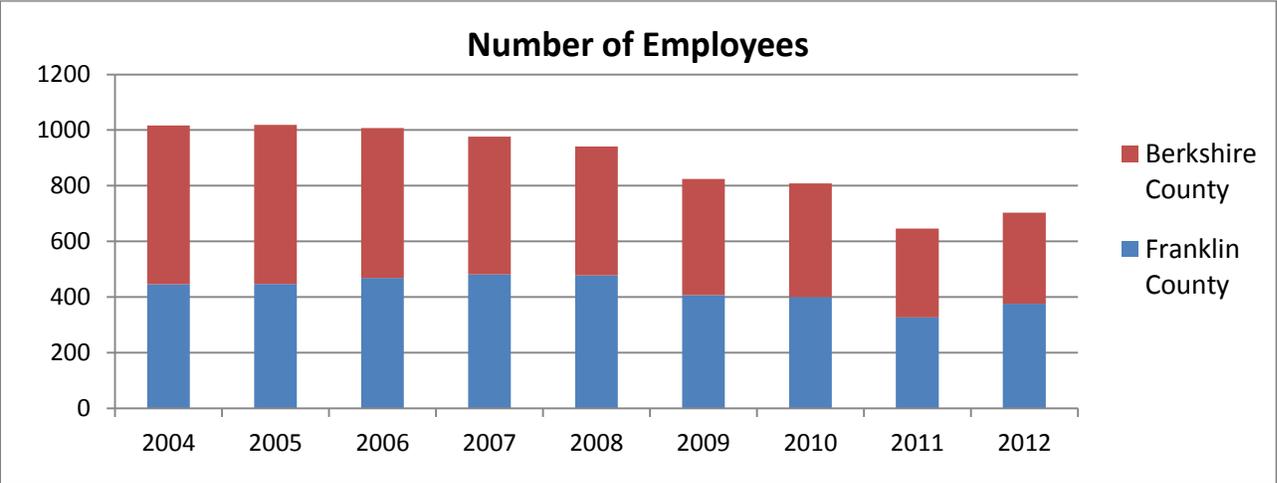
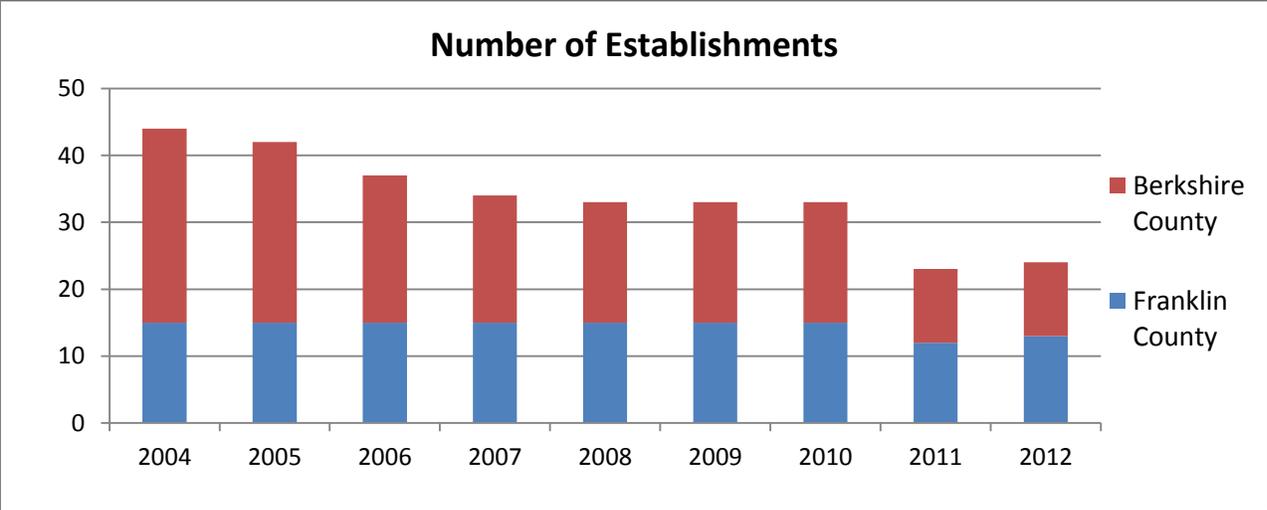
- Number of establishments decreased significantly by -45% (-20)
- Employment decreased significantly by -31% (-314)
- Annual Wages decreased by -14% (-\$7.0 million)
- In comparative 2012 dollars, annual wages decreased by -29% (-\$18.1 million)



Note: This location quotient (LQ) is measuring the significance of a cluster in a specific area in comparison to the national average (which is this graph equals 1.0).

Sources: STATS America's Innovation in American Regions, www.statsamerica.org/innovation/anydata/; U.S. Bureau of Labor Statistics, Consumer Price Index (CPI) Calculator, http://www.bls.gov/data/inflation_calculator.htm.

Manufacturing – Machinery Cluster continued.



Source: STATS America’s Innovation in American Regions, www.statsamerica.org/innovation/anydata/

Conclusion

This section provided a brief overview of the regional economy and trends for select Northern Tier industry clusters from 2004 through 2012. When considering trends during this timeframe it is important to have some context. During this period, the global economy experienced considerable fluctuation. The period began with a time of economic growth (2004-2006), followed by a global recession (2007-2009), and concluded with years of slow economic recovery (2010-2012). These factors were in addition to traditional socio-economic patterns that were the impetus for focusing on the Northern Tier for economic development support.

Data for this period shows the combined counties of Berkshire and Franklin with a decline in population and loss in overall labor force size. The region continued to experience incomes and wages much lower than the state average. These conditions occurring in a rural area add to the challenge of establishing and growing businesses. Targeting resources and strategies specific to this region has been important in supporting business growth and allowing key clusters to endure or grow.

The sectors examined were selected because they closely align with clusters identified in past Northern Tier studies. However, it should be noted that there are other clusters of prominence in the region not included, such as the education cluster (which includes higher educational institutions and independent schools) and manufacturing clusters related to plastics as well as paper & packaging. The pursuit of cluster development activities for these sectors may be something to consider in the future.

According to STATS America data, overall employment decreased in Berkshire and Franklin Counties, while the number of establishments increased from 2004 to 2012. Research into establishments for this same period from other data sources¹⁶ reaffirms the importance of small business in this region. Also according to STATS America, annual wages from 2004 to 2012 increased. However when using comparative dollars, annual wages actually decreased during this period.

Despite demographic shifts and economic fluctuations during this time, the Agriculture, Food Processing & Technology Center experienced growth. Franklin County in particular had a higher concentration of employment in this cluster, then compared to the nation. While the Arts, Entertainment, Recreation & Visitor Industries Cluster did not have as much growth, Berkshire County was able to sustain a consistently higher concentration of employment in this sector than compared to the nation.

The Forest & Wood Products Cluster and the Energy Cluster experienced declines in establishments and employment during the period. However even with the decline in Forest & Wood Products Cluster, there continued to be a higher concentration of

¹⁶ U.S. Census Bureau's County Business Pattern data and Non-employer Statistics program.

employment in this cluster in the region than compared to the nation. There continues to be a skilled workforce present and opportunity for this cluster.

For the Energy Cluster, this source includes data related to both fossil-fuel based energy and renewable-resourced energy. This area does not have these resources, so it will have a low employment location quotient compared to other areas of the country that rich in these resources. This region has been making great strides in renewable energy and energy efficiency during this period, with the growth of new businesses and the successful creation of sector-specific education and job training programs. Trends specific to renewable energy are not visible in this cluster data.

National shifts in manufacturing have shown an overall decrease in establishments and employment during this period. This trend was also experienced in the Berkshire and Franklin County region for the Fabricated Metal Products Cluster and Machinery Cluster. Looking at the annual data, the years of the Great Recession showed particular decline. However as the economy has been in recovery, there has been an increase in these clusters and in manufacturing overall in the region.

This review using STATS America offers a surface understanding of the experience of businesses and workers from 2004 to 2012 of select Northern Tier clusters. As has been noted, this was a period that included early growth and then was hit by an economic recession with global impacts. For this region, this period also included a localized disaster with significant infrastructure disruptions and direct damage to businesses due to Tropical Storm Irene flooding in 2011. Despite these challenges, clusters were able to sustain themselves and, in some cases, grow. As part of the cluster strategy for economic development, concentrations of employment above national averages indicate the presence of a skilled workforce and robust interconnected network of businesses and organizations. Combined with targeted strategies to support small business and specific clusters, the region may position itself for growth.

V. APPENDIX

Appendix 1 – 1986 Northern Tier Study Recommendations

Appendix 2 – List of Northern Tier Cities/Towns with Selected Data

Appendix 1: Recommendations from The Northern Tier Economy: A Strategic Analysis (1986)

5.2 Recommendations¹⁷

1. Develop a comprehensive business retention program.
 - a. Strengthen the economic monitoring activities in the region.
 - b. Implement a "calling program" which involves the regular visitation of key companies.
2. Promote the development of new enterprises.
 - a. Develop three "industrial workshops" in the Northern Tier
 - b. Hold regional non-traditional entrepreneurship classes and forums and target opportunities for new businesses to small local businesses and non-traditional entrepreneurs.
 - c. Promote the development of a Product Licensing Board at the University of Massachusetts.
 - d. Hold a regional forum on employee ownership structures.
3. Promote the development of natural resource based industries.
 - a. Encourage the Legislature to commission a systematic study of the financing needs of natural resource based industries.
 - b. Promote the development of the food related industries.
 - c. Promote the development of wood related industries
4. Support tourist development through annual events that promote the sense of the Northern Tier as a region.
 - a. Organize an "Upcountry" statewide bike race on Route 2 during the fall, and promote a cross country ski event in the winter.
 - b. Organize an annual industrial fair in conjunction with the agricultural fair.
5. Improve the responsiveness of local banks to the businesses in the region.
 - a. Create a Community Investment board to monitor the lending practices of banks in the region and to work with banks to improve their responsiveness to the region's credit needs.
6. Create mechanisms to stimulate the flow of private risk capital to smaller firms in the region.
 - a. Promote the development of a regional investment club.
 - b. Promote the development of investment fairs.
 - c. Create a risk capital fund to provide equity and subordinated debt to small start-up and expanding businesses in the region.
 - d. Create financing mechanisms for product development by lobbying for implementation of the Massachusetts Product Development Fund and promoting R&D limited partnerships.
7. Promote the effective involvement of the University of Massachusetts in the region's economic development.

¹⁷ Pages 130-161.

- a. Develop a Technology Transfer Program for small and traditional manufacturing firms.
 - b. Establish university polices to support relationships between the UMass School of Engineering and local manufacturers.
 - c. Create a Public Service Engineering Scholarship Program.
8. Promote the better coordination of employment and training and economic development.
 - a. Local economic development groups should encourage firms receiving public financing or support to make an agreement to list job openings with local employment office and to discuss employment needs with the staff of the local private industry council.
 - b. Local employment and training agencies should use the results of the Mt. Auburn survey of employers to investigate the reasons for unfilled job openings.
 - c. The state Industrial Services Program should consider providing funds to the work assistance centers so that they can support community colleges in new curriculum development for dislocated workers.
9. Improve the availability of transportation options for local residents and businesses.
 - a. Promote the development new small-scale transportation systems in the region.

Appendix 2: List of Northern Tier Cities/Towns with Selected Data

County	City/Town	2004 Population Estimate	2012 Population Estimate	2004- 2012 Population Change	Land Area (Square Miles)	2012 Population Density
Berkshire	Adams	8,513	8,383	-1.5%	22.9	365
Berkshire	Cheshire	3,338	3,219	-3.6%	26.9	120
Berkshire	Clarksburg	1,648	1,689	2.5%	12.8	132
Berkshire	Florida	656	749	14.2%	24.4	31
Berkshire	Hancock	1,057	716	-32.3%	35.7	20
Berkshire	Lanesborough	2,946	3,057	3.8%	29.0	105
Berkshire	New Ashford	243	227	-6.6%	13.5	17
Berkshire	North Adams	14,226	13,583	-4.5%	20.4	665
Berkshire	Savoy	704	688	-2.3%	35.9	19
Berkshire	Williams	8,209	7,700	-6.2%	46.9	164
Berkshire	Windsor	871	902	3.6%	35.0	26
Franklin	Ashfield	1,816	1,739	-4.2%	40.3	43
Franklin	Bernardston	2,211	2,134	-3.5%	23.4	91
Franklin	Buckland	1,997	1,902	-4.8%	19.6	97
Franklin	Charlemont	1,397	1,263	-9.6%	26.1	48
Franklin	Colrain	1,853	1,673	-9.7%	43.4	39
Franklin	Conway	1,886	1,904	1.0%	37.7	50
Franklin	Deerfield	4,786	5,119	7.0%	32.3	159
Franklin	Erving	1,533	1,802	17.5%	13.9	130
Franklin	Gill	1,396	1,502	7.6%	14.0	107
Franklin	Greenfield	17,873	17,553	-1.8%	21.7	808
Franklin	Hawley	347	337	-2.9%	30.9	11
Franklin	Heath	804	706	-12.2%	24.9	28
Franklin	Leverett	1,757	1,867	6.3%	22.8	82
Franklin	Leyden	803	722	-10.1%	18.0	40
Franklin	Monroe	98	121	23.5%	10.7	11
Franklin	Montague	8,383	8,420	0.4%	30.4	277
Franklin	New Salem	939	1,002	6.7%	45.0	22
Franklin	Northfield	3,154	3,034	-3.8%	34.4	88
Franklin	Orange	7,537	7,821	3.8%	35.4	221
Franklin	Rowe	348	394	13.2%	23.5	17
Franklin	Shelburne	2,066	1,898	-8.1%	23.3	82
Franklin	Shutesbury	1,832	1,777	-3.0%	26.6	67
Franklin	Sunderland	3,781	3,699	-2.2%	14.4	257
Franklin	Warwick	754	779	3.3%	37.3	21
Franklin	Wendell	996	866	-13.1%	32.0	27
Franklin	Whately	1,586	1,506	-5.0%	20.2	75
Worcester	Athol	11,816	11,631	-1.6%	32.6	357
Worcester	Petersham	1,273	1,239	-2.7%	54.2	23
Worcester	Phillipston	1,755	1,693	-3.5%	24.3	70
Worcester	Royalston	1,370	1,263	-7.8%	41.9	30

Table continued next page.

Region	2004 Population Estimate	2012 Population Estimate	2004- 2012 Population Change	Land Area (Square Miles)	2012 Population Density
Northern Tier Towns	130,558	128,279	-1.7%	1,158.5	111
Berkshire County	132,052	130,016	-1.5%	931.3	140
Franklin County	71,933	71,540	-0.5%	702.0	102
Berkshire & Franklin Counties	203,985	201,556	-1.2%	1,633.3	123
Massachusetts	6,451,279	6,646,144	3.0%	7,840.0	848

Sources: U.S. Census Bureau, Population Estimates; Massachusetts State Data Center at the UMass Donahue Institute; MassGIS Land Use, 2005