

# Responding to Displacement and Economic Restructuring in North Central Pennsylvania<sup>1</sup>

## I. Introduction

North Central Pennsylvania, while rural, is known for its strength in industrial manufacturing, particularly powdered metals. At its peak, Pennsylvania produced 40 percent of the country's powdered metal (PM) parts, with most production occurring in the six-county region centered in the towns of Ridgeway and St. Mary's (Cameron, Clearfield, Elk, Jefferson, McKean and Potter Counties). Manufacturing in 2003 still accounted for 43 percent of Elk County jobs and 24 percent in the 6-county region. The region coincides with ARC District 9B, overseen by the North Central Pennsylvania Regional Planning and Development Commission (NCPDRC).

The region experienced displacement in the 1980s as powdered metal manufacturers moved to the southern United States and to Mexico, often following the first and second tier automotive parts suppliers who are their major customers. In the 1990s, total employment in the region grew modestly, before declining again from 2000 to 2003. Today, the region's manufacturing base is threatened by structural changes in the powdered metal industry. Since the early 1990s, there has been significant consolidation, with an increasing number of local firms being bought out by global corporations such as GKN and Metaldyne. Linked with this, manufacture of PM parts has increasingly diffused across the U.S. and expanded in Europe, Mexico and now China. As a result, North Central Pennsylvania is losing its prominence in the global industry. Several factors could help keep PM strong in the region, including rapid industry growth globally, a well trained workforce, good economic and workforce development partnerships, and ties with Penn State University, a leading research center on new materials and innovative PM products. But it remains unclear how innovative area firms will be in the face of major industry shifts.

## II. Summary of Key Findings

- **Regionalism with Local Connections.** The North Central Pennsylvania Regional Planning and Development Commission (NCPDRC) has a regional approach and is relatively autonomous from short-term local political dynamics, allowing it to take a broader, more strategic approach to development in the region. It also seems to work effectively with local development agencies.
- **Integration of Workforce with Economic Development.** NCPDRC has integrated economic development and workforce development under the same roof for at least 20 years. Its leaders see the best approach to helping displaced workers as strengthening the "resiliency" of the region for the long-term not simply meeting short-term social service needs of displaced workers. They attempt to build resiliency by strengthening social and

---

<sup>1</sup> This field research report was written by Chris Benner of Penn State University as input to Stephen Herzenberg, Suzanne Teegarden, and Howard Wial, *Creating Regional Advantage in Appalachia: Towards A Strategic Response To Global Economic Restructuring* (Harrisburg, PA: Keystone Research Center, 2005) and as part of ARC contract #CO-12884T-03. Questions about the field report should be directed to [cbenner@psu.edu](mailto:cbenner@psu.edu).

institutional networks, both within the region and at a state, national and global level, that help support the region's economy and help residents adjust to economic change.

- **Deep Local Roots, Networked Externally.** NCPRPDC has deep roots in the community – for example, the Workforce Investment Board (WIB) director and the Economic Development Director combined have more than 50 years of experience in the organization – but also manages not be isolated from ideas circulating outside the region. The two directors are active in state, national and international networks of private industry associations and public sector service providers.
- **Effective Workforce Intermediation.** In the absence of a community college and a scarcity of other training institutions, NCPRPDC established its own training institute (the Industrial Technical Education Center or ITEC) that provides training in critically needed skills related to the region's industry. ITEC offers an AA degree, but its focus is on certificate programs—short-term skills training in very specific fields requested by employers, primarily in machine trades, die setting, and welding. In its role as the WIB, NCPRPDC has built geographic consortia that help identify and meet workforce needs.
- **A Pragmatic Cluster-based Approach.** Economic clusters (particularly powdered metals and wood products) are an important organizing principle for NCPRPDC's economic and workforce development staff, but they have used cluster approaches flexibly. For example, they describe core industry clusters as the 'tip of the iceberg,' and also pay attention to the underlying business services and infrastructure that support multiple clusters ("economic development not just enterprise development"). Similarly, the workforce consortia for manufacturing were built on a geographic rather than a narrow cluster basis. In a rural region without the population and employment density of urban areas, broad geographical consortia proved a better approach to identifying and meeting common training and technical assistance needs, and improving the efficiency and effectiveness of service provision, particularly to incumbent workers.
- **A Need for More Strategic Knowledge about the Key Local Cluster.** Overall the region provides many positive lessons for developing proactive programs for addressing problems of dislocated workers. Yet the region also exemplifies the challenges facing rural regions throughout Appalachia. Despite having well integrated economic development and workforce development programs, and a strong competitive position within a technically sophisticated manufacturing sector that is growing globally, the region is still significantly threatened by economic restructuring. More and better strategic research and information about growing niche markets for powdered metal products could help fill a gap in the region's economic development programs, with potential for expanding employment since the overall industry is likely to grow rapidly.

### III. Regional Economic and Demographic Context

Table 1 contains selected economic and demographic characteristics of the Pennsylvania field visit counties. Per capita market income was 73 percent of the statewide average and 71 percent of the national average according to the 2000 Census. The region's poverty rate, 11.6 percent,

**Table 1. A Profile of the Pennsylvania Field Visit Counties and Comparison Regions Indexed to U.S. = 100**

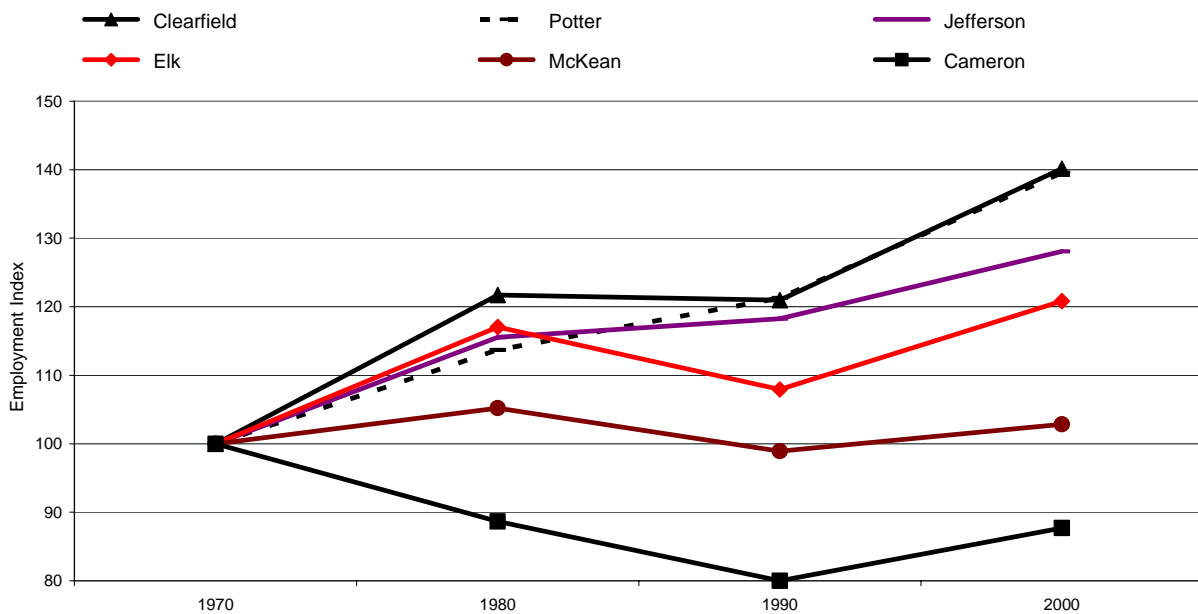
<b>County / Region</b>	<b>ARC County Classification</b>	<b>Three Year Average Unemployment Rate (1999-2001)</b>	<b>Per Capita Market Income (2000)</b>	<b>Poverty Rate (2000)</b>	<b>Labor Force Participation Rate</b>	<b>Labor Force Participation Rate (Women)</b>	<b>Percent Change in Participation of Women (1980-1990)</b>	<b>Percent Population Change (1990-2000)</b>	<b>Percent of Adults with High School Diploma</b>	<b>Percent of Adults with College Degree</b>	<b>Population (2000) - not indexed</b>
United States		4.3	25,676	12.4	64%	58%	27%	13%	80%	24%	281,421,906
<b>Variables Below Are All Indexed to U.S. = 100</b>											
Appalachian United States		109	77	110							
Pennsylvania		102	97	89	97	96	68	26	102	92	12,281,054
Appalachian Pennsylvania		116	83	92							
All 6 Counties in FV Region			71	93				20			234,416
<b>Counties</b>											
Cameron	Transitional	205	76	76	90	92	-47	8	99	50	5,974
Clearfield	Transitional	177	64	101	90	89	45	52	98	45	83,382
Elk	Transitional	163	80	56	99	96	-1	5	103	50	35,112
Jefferson	Transitional	158	69	95	91	84	41	-2	101	48	45,932
McKean	Transitional	128	74	106	92	95	22	-19	102	57	45,936
Potter	Transitional	112	78	102	94	90	58	63	100	50	18,080

Source: Keystone Research Center (KRC) based on Census data and other data downloaded from [www.ARC.gov](http://www.ARC.gov).

was below that the national average (12.4 percent) but above the Pennsylvania poverty rate (11 percent). Unemployment rates in the region were well above the state and national unemployment rates in the 1999-2001 period. Education levels in the region are significantly lower than statewide and national averages. Only 11 to 14 percent of the adult population has completed a 4-year college degree, roughly half of the state and national averages. Overall approximately 70 percent of the adult population in the region has no college education at all.

North-Central Pennsylvania is a predominantly rural area, with a handful of small towns. The six-county region had a total population of 234,416 in 2000. It is ethnically homogenous, with 98 percent of the population white, non-Hispanic. The region was hit hard during the economic downturn of the 1980s, during which four of six counties lost employment (Figure 1). In the 1980s as a whole, the region lost nearly 7 percent of its population. In the 1990s, the population of the region grew by 2.4 percent. This was still slower than the statewide totals.

**Figure 1. Employment in North Central Pennsylvania, 1970-2000**  
(indexed to 1970 = 100)



Source: KRC analysis of the Census.

The population in the region is older than the state average, with 17-20 percent of the population 65 and older, compared to 12 percent nationally, and 16 percent in Pennsylvania as a whole.

The economy of North Central Pennsylvania is highly dependent on manufacturing, which provided nearly 25 percent of jobs in the region in 2002 (Table 2 and Figure 2). Wood products (including furniture) are an important component of this manufacturing, but the region is mostly known for its strong powdered metal industry, which falls into the fabricated metal product classification in Table 2. Also strong are machinery and electrical equipment manufacturing.

**Table 2. 2002 Average Monthly Employment by Industry and County, North Central PA and Statewide Totals**

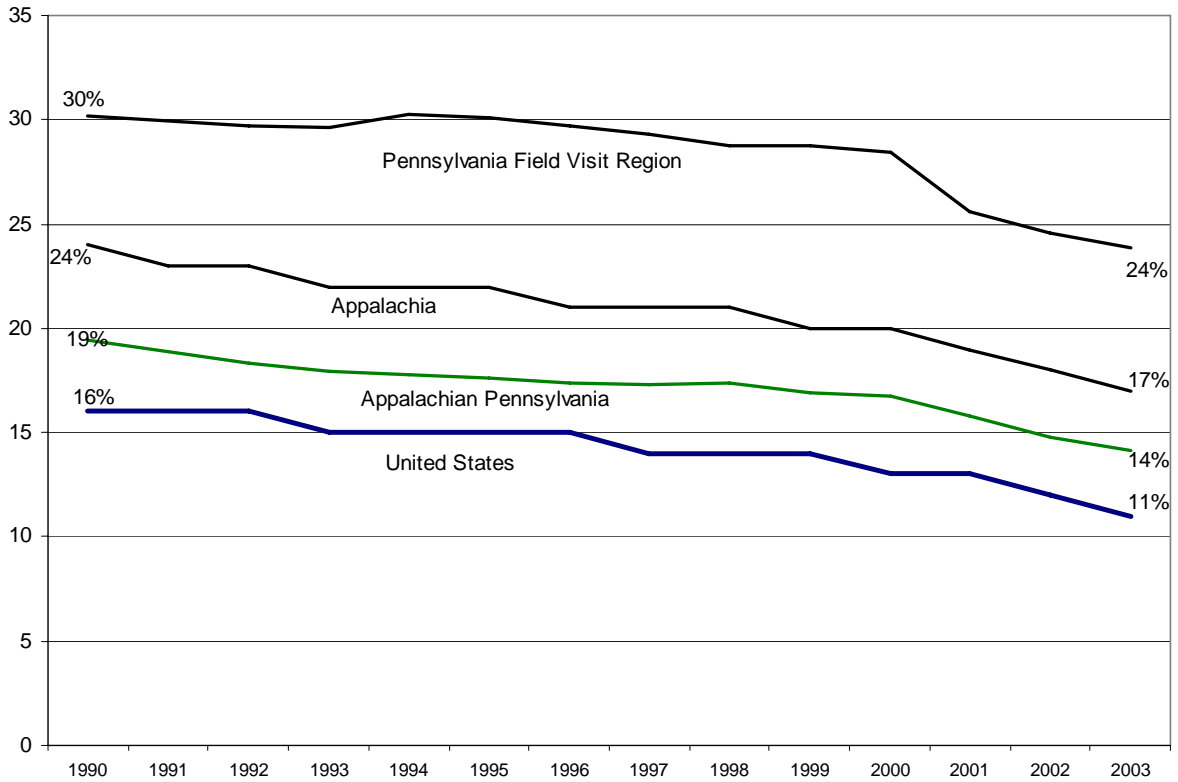
Industry	County		2-core county totals		County				6-county totals		Pennsylvania Statewide	
	Elk	Jefferson	Total #	percent of Total	Cameron	Clearfield	McKean	Potter	Total #	percent of Total	Total #	percent of Total
Agriculture, Forestry, Fishing and Hunting	38	112	150	0.5		95	65	171	481	0.5	23,482	0.4
Mining	53	474	527	1.7		626	351		1,504	1.7	18,042	0.3
Utilities	73	90	163	0.5		293	99		555	0.6	31,649	0.6
Construction	373	524	897	3.0		1,118	663	339	3,017	3.4	248,114	4.6
Manufacturing	6,998	4,277	11,275	37.2	1,329	3,984	4,705	931	22,224	24.8	761,276	14.1
<i>321 - Wood Product Manufacturing</i>	223	554	777	2.6		867	868	258	2,770	3.1	29,058	0.5
<i>326 - Plastics and Rubber Products Manufacturing</i>		417	417	1.4					417	0.5	45,130	0.8
<i>327 - Nonmetallic Mineral Product Manufacturing</i>	27	670	697	2.3		157	635	59	1,548	1.7	33,760	0.6
<i>331 - Primary Metal Manufacturing</i>	156		156	0.5					156	0.2	48,253	0.9
<i>332 - Fabricated Metal Product Manufacturing</i>	3,627	1,115	4,742	15.6		661	913	188	6,504	7.3	94,972	1.8
<i>333 - Machinery Manufacturing</i>	454	736	1,190	3.9		698			1,888	2.1	60,725	1.1
<i>335 - Electrical Equipment, Appliance, and Component Manufacturing</i>	1,478	119	1,597	5.3	103		122		1,822	2.0	26,593	0.5
Wholesale Trade	160	348	508	1.7		866	396		1,770	2.0	225,274	4.2
Retail Trade	1,474	1,778	3,252	10.7	239	4,768	1,921	649	10,829	12.1	666,261	12.3
Transportation and Warehousing	330	486	816	2.7		2,936	484	240	4,476	5.0	185,535	3.4
Information	193	162	355	1.2		454	234		1,043	1.2	128,315	2.4
Finance and Insurance	271	339	610	2.0	30	834	595	111	2,180	2.4	267,436	5.0
Real Estate and Rental and Leasing	81	74	155	0.5		378	117		650	0.7	69,636	1.3
Professional, Scientific, and Technical Services	315	304	619	2.0		549	176	63	1,407	1.6	278,427	5.2

Industry	County		2-core county totals		County				6-county totals		Pennsylvania Statewide	
	Elk	Jefferson	Total #	percent of Total	Cameron	Clearfield	McKean	Potter	Total #	percent of Total	Total #	percent of Total
Management of Companies and Enterprises	47	33	80	0.3					80	0.1	58,716	1.1
Administrative and Waste Management and Remediation Services	184	216	400	1.3		943	363		1,706	1.9	264,301	4.9
Educational Services	231	*	231	0.8		225	398		854	1.0	158,760	2.9
Health Care and Social Assistance	2,053	2,217	4,270	14.1		5,342	2,485	899	12,996	14.5	752,996	14.0
Arts, Entertainment, and Recreation	119	86	205	0.7		110	121		436	0.5	74,455	1.4
Accommodation and Food Services	641	993	1,634	5.4		2,163	1,155	296	5,248	5.9	390,836	7.2
Other Services (except Public Administration)	461	467	928	3.1	59	1,313	635	148	3,083	3.4	186,240	3.5
Federal Government	89	114	203	0.7		241	499	46	989	1.1	108,502	2.0
State Government	162	325	487	1.6	141	1,605	213	227	2,673	3.0	138,767	2.6
Local Government	1,217	1,501	2,718	9.0	288	3,086	2,096	847	9,035	10.1	465,861	8.6
Total Employment	15,479	14,867	30,346	100.0	2,525	32,106	17,274	7,233	89,484	100.0	5,396,047	100.0

Note: When employment in an industry is low, data is sometimes suppressed at the county level to avoid inadvertently revealing information about individual employers. For this reason, the 6-county totals in some industries may also be below actual employment

Source: Keystone Research Center (KRC) analysis of Quarterly Census of Employment and Wages (QCEW) data.

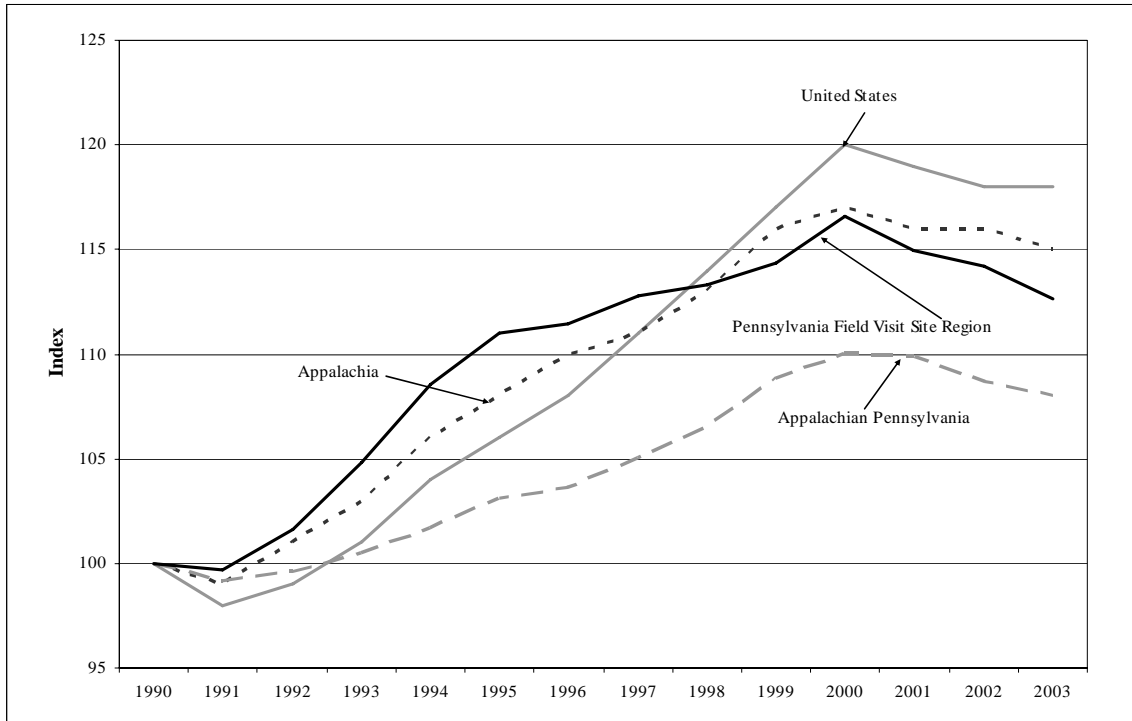
**Figure 2. Manufacturing Employment Share,  
North Central Pennsylvania and Comparison Regions**  
(percent of total employment)



Source: Table A1.

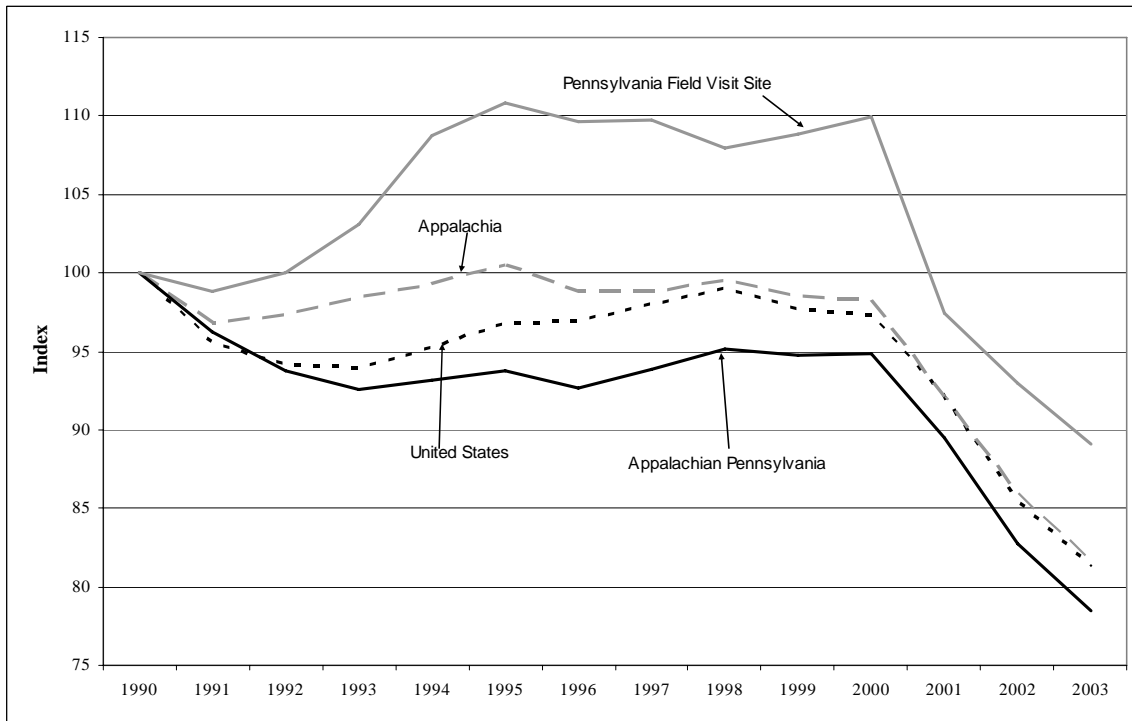
After the downturn of the 1980s, the 1990s was a period of economic growth in all counties in the region (Figure 3). Growth also took place in manufacturing employment (Figure 4). There has been a significant restructuring of employment in the region since 2000. From 2000 to 2003, the region lost some 19 percent of its manufacturing base.

**Figure 3. Pennsylvania Total Covered Employment (Indexed to 1990 Employment = 100)**



Source: Table A2.

**Figure 4. Pennsylvania Manufacturing Employment (Indexed to 1990 Employment = 100)**



Source: KRC derived from Table A3.



### *Powdered Metal Industry in North Central Pennsylvania<sup>2</sup>*

The economic fortunes of the region are heavily tied to the region's powdered metal industries. The powdered metal (PM) industry involves the formation of metal parts out of engineered powdered particles. A mixture of elemental or alloy powders are mixed together with lubricants and binding material and compacted in a die. The resultant shapes are then heated in a controlled-atmosphere furnace (sintering) to bond the particles together. The resulting part then typically goes through some finishing process, which may include final sizing, joining (e.g. through welding, brazing or fastening), plating or coating, and steam or heat treatment, depending on the final product. Thus, there are actually multiple sub-components of the PM industry. A 1999 study by the Ben Franklin Technology Center of Central and North Central Pennsylvania divided the industry into three main categories:

- Finished products, including conventional & specialized parts,
- Raw materials, including carbide, tungsten, molybdenum, titanium, superalloy, magnesium, stainless steel and copper base alloys. These base materials are engineered into particulate materials that are shipped to finished product manufacturers.
- Support services, including: capital equipment providers, particularly for presses and furnaces; compaction tool providers; finishing treatment (e.g. coatings, platings); and educational, training, and technical assistance providers for the industry.

PM components have found a wide-range of applications, including in automobiles, lawn mowers, riding tractors, power tools, electric motors, aircraft engines, and even weapons systems and computer hardware. Utilizing malleable materials for part construction in PM has significant advantages over casting or forging, including greater flexibility and lower costs. In recent years, materials research and advanced technology has improved the density and strength of PM parts, giving them greater tolerance to higher heat and pressure, allowing them to be used in a wider variety of applications. This can be readily seen in the automotive sector, which accounted for some 70 percent of the final market for the PM parts industry in 1997. The typical US car had 20 pounds of PM parts in 1988, 32 pounds in 1998, and up to 48 pounds per car currently, even up to 60 pounds in some Chrysler models.<sup>3</sup> Throughout the 1990s, the PM industry grew rapidly, with total North American shipments of iron powder parts more than doubling between 1990 and 2000.<sup>4</sup> The North American industry was hit hard during the recent economic recession, but began to recover in 2002 and 2003. Total PM shipments in North America were valued at nearly \$5 billion in 2004, up from \$1.97 billion in 1997.<sup>5</sup> (For bar graphs displaying the growth of iron powdered metal parts and copper powdered metal parts from 1990 to 2002, see Metal Powder Industrial Federation, 2004 State of the PM Industry Report, online at [www.mpif.org](http://www.mpif.org)).

---

<sup>2</sup> Much of this section is based on an unpublished May 1999 report titled "Technology 21 Advanced Materials Cluster Report" produced by the Ben Franklin Technology Center of Central and Northern Pennsylvania, 115 Technology Center, University Park, PA 16802, 814-863-4558.

<sup>3</sup> Ben Franklin report and [www.mpif.org](http://www.mpif.org)

<sup>4</sup> Metal Powder Industrial Federation, 2004 State of the PM Industry Report, [www.mpif.org](http://www.mpif.org)

<sup>5</sup> Metal Powder Industrial Federation, [www.mfip.org](http://www.mfip.org), accessed October 1, 2004.

The global industry has undergone significant consolidations in recent years. Through a series of acquisitions, the UK-based company GKN has become the globally dominant player in PM. By 2004, GKN-owned companies employed 48,000 people in more than 30 countries, with sales of more than \$8.2 billion. GKN was estimated to be more than three times larger than its nearest competitor.<sup>6</sup> In 1999, the top five companies in the PM industry were estimated to account for over 40 percent of total sales, up from 25 percent only 5 years previously.

For many years, North Central Pennsylvania has been known as the powdered metal capital of the world. An estimated 40 percent of the entire U.S. PM industry was concentrated in the region at its peak, according to some estimates.<sup>7</sup> The powdered metal industry emerged in north central Pennsylvania in the late 1940s, out of related industrial carbon and metalworking industries. The subsequent growth and concentration of PM firms in the region, particularly around the town of St. Mary's, has given the region the nickname "Powder Valley". The Ben Franklin Technology Center identified a total of 46 PM manufacturing firms in the region in 1998, with a total employment of over 6,200, and another 800 people employed in various support service firms. This total employment is up nearly 70 percent from the number found in a similar 1987 study.

Major PM firms in the region include:

- Keystone Powdered Metals
- Metaldyne Sintered Components
- GKN Sinter Metals
- SMC Powder Metallurgy
- Allegheny Coatings
- Hoeganaes
- P.C. Systems
- Gasbarre Products
- ARC Metals
- J&S Grindings
- Horizon technologies
- Sinterfire
- Jet Metals
- Metaltech
- Liberty Pressed Metals
- Specialty Pressed Components

The global consolidation in the industry has definitely affected North Central Pennsylvania's competitive position. Production has been expanding in Mexico and China, as well as areas in the U.S. south, often following the auto parts industry. Nonetheless, economic development officials in the region report significant hiring among local employers in the last year, and there is some growth.

---

<sup>6</sup> [www.gkn.com](http://www.gkn.com)

<sup>7</sup> <http://www.cisp.psu.edu/menu1/pminpa.htm>

## IV. Overview of Responses to Displacement

Programs for dislocated workers in the region are coordinated through the North Central Pennsylvania Regional Planning and Development Commission (NCPRPDC)<sup>8</sup> which has been operating in the region for more than three decades. It functions as a regional development agency for a 6-county region, including Cameron, Clearfield, Elk, Jefferson, McKean and Potter Counties. The NCPRPDC houses a wide-range of both economic development and workforce development services under one roof.

### Workforce Development Services:

- Core Activities: including the Pennsylvania CareerLink website, orientation, career planning, labor market information, resume writing, and vocational interest services;
- Intensive services, including comprehensive assessment and case management, short term and pre-vocational services, individual counseling and career planning;
- Training services, including incumbent worker training, on-the-job training for new employees, job-seeker training services, entrepreneurial training, occupational skill training, adult education and literacy training; and computer training
- Support services, including welfare assistance, and internet/multi-media/telecommunication services.

### Economic Development Services.

- The agency has channeled more than \$33 million in Appalachian Regional Commission funds for a wide variety of projects in the region.
- Infrastructure/Economic Development Grants: North Central coordinates a wide variety of state and federal grant programs to improve basic sewer, water and transportation infrastructure in the region;
- Incubator sites: North Central has helped communities develop industrial parks and sites to help start small businesses. Examples include the Ridgway Multi-Tenant Industrial Site and the Stackpole Center.<sup>9</sup>
- Export Marketing Services:<sup>10</sup> this includes consultations, technical assistance, market research, education, trade events, and networking through the Commonwealth of Pennsylvania's 17 overseas offices.
- Low interest business loans: North Central administers seven small business and micro-loan funds. They claim to have created over 3,000 jobs by providing \$35 million in loans to regional businesses.
- Procurement Outreach Services: Federal Procurement Assistance helps local companies discover business opportunities producing products for the federal government and military contracts.
- Local and state tax incentives, through the Keystone Opportunity Zones and a Foreign Trade Zone located at the DuBois-Jefferson County Airport.

---

<sup>8</sup> <http://web2.ncentral.com/ncprpdc/>

<sup>9</sup> This site now includes 18 manufacturing firms on a 40-acre site of land formerly owned by the Stackpole Corporation. [http://www.pasitefinder.state.pa.us/docs/success\\_storynew5.asp](http://www.pasitefinder.state.pa.us/docs/success_storynew5.asp)

<sup>10</sup> <http://www.ncexport.com/>

Individually, there is nothing particularly unique about any of these services. What is more unusual, however, is having such a comprehensive program of both economic and workforce development integrated into the same organization. Furthermore, this integration has existed since the early 1980s, when the administration of the predecessor of the current workforce system, the Job Training Partnership Act (JTPA), was housed within the pre-existing NCPRPDC. This means that for over 20 years, training programs in North Central have been integrated with economic development strategies in the way envisioned by the Workforce Investment Act of 1998.

### ***Responding to Dislocated Workers***

Interviews with CareerLink and Workforce Investment Board (WIB) officials in the region suggest that the region has been fairly proactive in addressing programs dislocated workers face, and that the integration of workforce and economic development perspectives isn't simply limited to leadership levels, but extends to front-line staff in local CareerLink centers as well. For example, Harry Price, an Employability Counselor at the Clearfield Career link described a restructuring in internal operations following the implementation of the Workforce Investment Act (WIA). Initially they had internal work teams organized around Core, Intensive and Training services, the basic categories of WIA assistance. Quite quickly, however, they restructured around two internal work teams—one focused on services to employers, and one focused on services to workers—with regular meetings between the two teams.

None of the people interviewed said that there was any formal early warning system in place, but all claimed that the high levels of local ownership in major employers in the area, combined with strong social networks in the region, and regular meetings of employer consortia, meant that they usually had some indicators of possible lay-offs quite early. In cases where major lay-offs have occurred, informants described effective responses from a Rapid Response Team. The members of this team are often able to meet with people likely to be displaced while they are still employed, providing them with information on the range of services available through CareerLink and related programs.

The NCPRPDC has been proactive about trying to get TAA assistance for displaced workers in the region, but their efforts were constrained by a lack of available funds at the state level. Informants described a problem with administering of the funds in the past, stating that funds were distributed to displaced workers with no regard for whether the training people who were receiving with these funds were likely to lead to productive jobs. Ultimately the state ran out of money for a period of time, and all disbursements were stopped. Now, the state is trying to implement somewhat more restrictive criteria for distributing these funds, focused on training that is likely to lead to better job opportunities.

CareerLink officials interviewed talked about the importance of individual case management and tailoring advice and assistance to the individual needs of displaced workers. They pointed to occupational projections, as well as industry reports, as evidence of tailoring advice to individuals based on real job availabilities. At times of large layoffs, the staffing levels in CareerLinks were described as too small to do individualized advice based on actual job openings, but recognition of the value of this approach was evident.

### *Linking Workforce and Economic Development*

The real strength of programs for dislocated workers in the region is rooted in their long-term integration with economic development strategies. The director of the WIB has been involved in running training programs in the area since the 1970s, and has integrated an economic cluster approach since the start of his work. In his words:

“... [when we started to be housed] within the North Central Regional Planning Commission... we looked at where the jobs were. We looked at area growth studies that had been funded by the Appalachian Regional Commission, EDA (Economic Development Administration) and those kinds of groups. We had two areas that we ended up looking at. One was wood products. The other was powdered metals. Those were our two growth clusters.”

Early cluster focused interventions involved detailed discussions with company leaders, combined with visits to those same leaders by economic development officials, and over time they were able to build up a level of understanding of the industries in the area and trust with company leaders that is rare in workforce development programs that have historically been focused on poverty alleviation and assisting only disadvantaged workers.

These discussions with leaders within the PM industry in the region, which centered on major skill gaps in regional labor markets, eventually led to the establishment of the Industrial Technical Education Center. Initially their hope was to establish a training program within an existing college, but aside from the A.S. training provided by the Penn State DuBois campus, there was a scarcity of training institutions in the region. They were able to start a JTPA funded skill center, focused on vocational training for dislocated workers. This eventually grew into a licensed private school, with significant initial funding and involvement in curriculum development from area firms. ITEC now has well developed programs in basic powder metal die setting, comprehensive welding, basic machinist technology, and industrial electronics technician programs. They also design specific technical courses for incumbent workers in firms in the region.

The most developed cluster approach in the region is in Powdered Metals. Since at least the mid-1990s, Pennsylvania’s Department of Community and Economic Development has been providing assistance to the powdered metal industry in the region. One strong focus has been on training people in the industry at multiple levels. Robert Loeb, the Director of Academic Affairs at Penn State-DuBois, described the goal of this “Powdered Metal Initiative” as meeting human resource needs, and fostering career ladders, at multiple levels:

- *High School:* This includes providing information to students at the St. Mary’s High school on employment opportunities within the Powdered Metals industry, and providing them basic information on the principals and technical skills required for entry-level positions in the industry.

- *ITEC*: The Industrial Technical Education Center in Ridgway focused on certificate level training programs in applied skills, including die setting, welding, machinist technology and industrial electronics.
- *PSU-DuBois Associate's Degree in Material's Engineering*: PSU DuBois operates an associate's degree program in Materials Engineering. People graduating from this program typically go to work at a technician's level in area firms. Since the mid 1990s, this program has typically graduated between three and 15 people a year, with a strong network of graduates of the program now helping to strengthen industrial and occupational networks in the region.
- *PSU-DuBois Continuing Education*: The DuBois campus also has a continuing education program that conducts customized contract training programs on-site for the employees of PM firms in the region.
- *PSU-University Park and the Center for Innovative Sintered Products*: The University Park campus of Penn State has one of the world's leading departments on materials science, with a strong program in powdered metals and sintered products. Many people with B.S. degrees from this program don't necessarily go to work in PM firms themselves, but frequently go to work for consulting firms, or with automotive firms (i.e. clients of PM parts firms), which typically pay higher salaries and where their knowledge of the science and technology is still quite useful. In 2000, the Center for Innovative Sintered Products<sup>11</sup> was established to promote innovation research and design of PM products, and to help commercialize those innovations through working with firms in the industry. Though the Center works with firms throughout the world, and is thus not particularly focused on Pennsylvania, a significant number of Pennsylvania firms are members of the Center. It does provide a valuable global resource on the cutting edge of research and design of new products in the industry, with training at a Ph.D. level.

In practice, the high school, ITEC, and PSU-DuBois programs are strongly focused on North Central Pennsylvania. Few people who complete the A.S. degree program actually come to Penn State central campus in University Park, however, and the programs at Penn State seem to be geared more to a national and international focus.

The Ben Franklin Technology Center of Central and Northern Pennsylvania, housed at Innovation Park near the PSU-UP campus, has also been a source of support for the industry.<sup>12</sup> In addition to providing research assistance on trends in the industry, it has also been a source of loans and technical assistance, and a conduit for DCED funding to the power metal initiative in the region. Two high profile grants in recent years include assistance to two prominent local firms.

---

<sup>11</sup> [www.cisp.psu.edu](http://www.cisp.psu.edu)

<sup>12</sup> Two recent high-profile investments from the Ben Franklin centers include an investment in Allegheny Coatings for a project to give parts greater corrosion prevention through an improved sealant, and another investment in Hoeganaes to commercial a new production process that would increase the density of PM parts.

While the NCPRPDC has found a cluster approach useful in their economic development and training efforts, it has also found it difficult to coordinate collective initiatives by industry across large distances. As a result, it has developed five geographically based employer consortia within the larger region, using these to identify common training needs for incumbent workers within local labor markets. These needs are primarily for less technical skills, and more general training, rather than firm specific skills. Examples include lean manufacturing systems, time management, supervisory skills, and so on.

This long-term perspective, and combination of regional and industry perspectives on the economy and training opportunities, permeates their approach to dislocated workers as well. The overall goal is to identify problems early, to make it easier to intervene to prevent closure of the firm if possible, and to develop early succession planning. The geographically based employer consortia are useful in terms of a range of businesses in the region, not just business in powdered metals.

**Table A1. Manufacturing Employment Share, Pennsylvania Field Visit Counties and Comparison Groups**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
United States	16	16	16	15	15	15	15	14	14	14	13	13	12	11
Appalachia	24	23	23	22	22	22	21	21	21	20	20	19	18	17
Non-Appalachian Pennsylvania	19	18	18	18	17	17	17	16	16	15	15	14	13	12
Appalachian Pennsylvania	19	19	18	18	18	18	17	17	17	17	17	16	15	14
All 6 Counties in Field Visit Region	30	30	30	30	30	30	30	29	29	29	28	26	25	24
<b>Individual Counties</b>														
Cameron	51	52	52	52	54	55	55	53	56	57	56	53	52	53
Clearfield	17	17	16	16	16	17	16	16	16	16	16	14	12	12
Elk	50	49	50	51	52	51	51	50	49	49	49	46	45	43
Jefferson	33	33	33	33	32	31	31	31	31	32	32	29	29	27
McKean	32	32	31	30	31	32	32	32	30	30	29	27	26	26
Potter	22	20	19	21	22	22	21	19	18	16	15	13	13	13

Source: KRC analysis of QCEW data.

**Table A2. Total Employment in Pennsylvania Field Visit Counties and Comparison Regions (Indexed to 1990)**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
United States	100	98	99	101	104	106	108	111	114	117	120	119	118	118
Appalachia	100	99	101	103	106	108	110	111	113	116	117	116	116	115
Non-Appalachian Pennsylvania	100	98	97	98	99	100	101	103	105	107	109	112	112	111
Appalachian Pennsylvania	100	99	100	100	102	103	104	105	107	109	110	110	109	108
All 6 Counties in Field Visit Region	100	100	102	105	109	111	111	113	113	114	117	115	114	113
<b>Individual Counties</b>														
Cameron	100	96	95	98	103	106	104	103	112	115	119	111	107	109
Clearfield	100	100	102	106	111	114	114	116	117	117	118	119	121	120
Elk	100	99	102	108	114	115	115	116	114	114	114	109	107	105
Jefferson	100	97	99	101	101	101	104	104	104	104	105	101	102	103
McKean	100	101	102	102	105	109	109	109	110	111	112	112	109	107
Potter	100	108	110	115	118	121	122	127	133	147	168	171	159	146

Source: KRC analysis of QCEW data.



**Table A3. Manufacturing Employment (1000s), Pennsylvania Field Visit Counties and Comparison Groups**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
United States	17797	17007	16756	16725	16950	17235	17245	17448	17617	17391	17314	16386	15209	14460
Appalachia	1826	1769	1778	1798	1814	1835	1805	1804	1818	1799	1794	1682	1569	1491
Non-Appalachian Pennsylvania	526	497	486	481	480	478	470	471	468	460	457	443	410	383
Appalachian Pennsylvania	425	409	398	393	396	398	394	399	404	402	403	380	351	333
All 6 Counties in Field Visit Region	24	24	24	25	26	26	26	26	26	26	26	26	23	22
<b>Individual Counties</b>														
Cameron	1.2	1.2	1.2	1.2	1.3	1.4	1.4	1.3	1.5	1.5	1.6	1.4	1.3	1.4
Clearfield	4.4	4.4	4.5	4.5	4.8	5.1	4.8	5.0	4.9	4.9	5.0	4.4	4.0	3.7
Elk	7.3	7.1	7.4	8.0	8.7	8.6	8.4	8.4	8.2	8.2	8.2	7.3	7.0	6.6
Jefferson	4.8	4.7	4.7	4.9	4.7	4.5	4.6	4.8	4.8	4.8	4.9	4.3	4.3	4.1
McKean	5.1	5.2	5.1	5.0	5.3	5.7	5.7	5.6	5.3	5.4	5.4	4.9	4.7	4.6
Potter	1.0	1.0	1.0	1.1	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.0	0.9	0.9

Source: KRC analysis of QCEW data.

**Table A4. Manufacturing Employment Indexed to 1998=100, Pennsylvania Field Visit Counties and Comparison Groups**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
United States	101	97	95	95	96	98	98	99	100	99	98	93	86	82
Appalachia	100	97	98	99	100	101	99	99	100	99	99	93	86	82
Non-Appalachian Pennsylvania	112	106	104	103	103	102	100	101	100	98	98	95	88	82
Appalachian Pennsylvania	105	101	99	97	98	99	97	99	100	100	100	94	87	82
All 6 Counties in Field Visit Region	93	92	93	95	101	103	102	102	100	101	102	90	86	83
<b>Individual Counties</b>														
Cameron	82	80	79	81	89	94	92	87	100	104	107	94	90	92
Clearfield	91	91	92	91	99	104	99	102	100	101	103	90	81	76
Elk	89	86	90	97	105	105	103	103	100	99	100	88	85	81
Jefferson	101	99	100	103	99	95	98	100	100	102	104	91	90	87
McKean	96	98	96	94	99	107	108	105	100	102	101	92	88	86
Potter	90	87	87	97	105	108	105	102	100	97	104	92	84	77

Source: KRC analysis of QCEW data.