Intermediate Steel Industry Suppliers in the Pittsburgh Region: A Cluster-based Analysis of Regional Economic Resilience

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Central Research Questions

- Can intermediate suppliers survive the decline of a regional signature industry?
- Can a cluster of firms from traditional industries serve as a source of regional economic resilience?
- What is their place in the global value chain for the steel industry?

Decline of Steel in Pittsburgh

	1978	1988	1998
Steel-making Capacity*			
Millions of net tons	16.8	8.8	6.4
Share of US Capacity	11.8%	7.5%	4.6%
Primary Metals Employment**			
Thousands of workers	89.6	21.0	18.2
Share of Pittsburgh workforce	10.5%	2.6%	1.8%

**Source: Steel Plant Database of the Center for Industry Studies*
***Source: County Business Patterns, U.S. Census Bureau*

Global Traditional Industry Clusters

- Steel in the Ruhr Valley (Grabher 1991)
  - Cathedrals in the Desert
  - Lock-in vs. active versatility
- Auto and Metals in Styria (Todtling and Trippl 2004)
  - Integration Trap vs. Fragmentation Trap
- Steel-Industry Suppliers in Teeside (Sadler 2004)
  - Technology/Market vs. Product Basis

Pittsburgh's Steel-Industry Suppliers

- Population
  - Source: AIST Annual Directory, 2003
  - 289 firms listed in Pittsburgh MSA
    - 20% of all listings
    - 50% of machinery and equipment listings
- Sample
  - Contacted 289 suppliers for on-line survey
  - Endorsement letter from US Steel and AIST
  - 77 firms completed survey

Cluster Characteristics

2003 Data	Pittsburgh MSA**	Supplier Group*	Survey Respondents*
Establishments	60,752	259	66
Employees (‘000)	1035	12	3
Ave. Annual Wage	$36K	$56K	$53K

**Source: 259 of the 289 Suppliers from the AIST Directory and 66 of the 77 respondents were matched to establishments in the Quarterly Census of Employment and Wages (ES202 Data) of U.S. Census Bureau*

***Source: County Business Patterns, U.S. Census Bureau*

Survey Overview

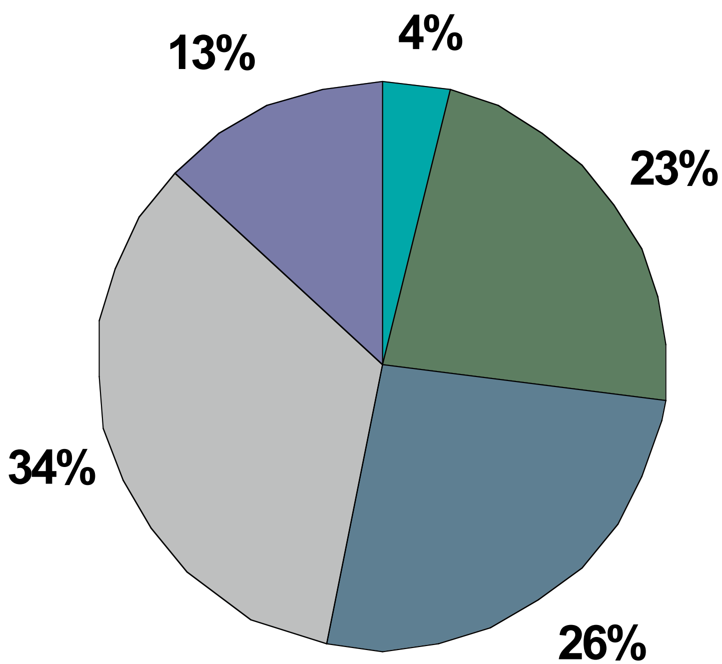
1. Firm Location and History
   - Organizational structure, locations, employment size, start date
2. Firm Products and Markets
   - Product categories, market sectors, geographic markets
3. Relationship to the Pittsburgh Region
   - Regional linkages with labor market, universities and other businesses

Varied Structure and History

- Cluster includes Multinational Firms
  - 17 of 27 multilocation firms have headquarters in Pittsburgh MSA
- Cluster includes Entrepreneurial Firms
  - Start-ups after 1990 (decline of big steel)

    ⅓ of all firms, ½ of smallest firms
- Cluster includes Steel Industry Linkages
  - Sale to steel industry in last six months: 95%
  - Majority of sales to steel industry: 65%

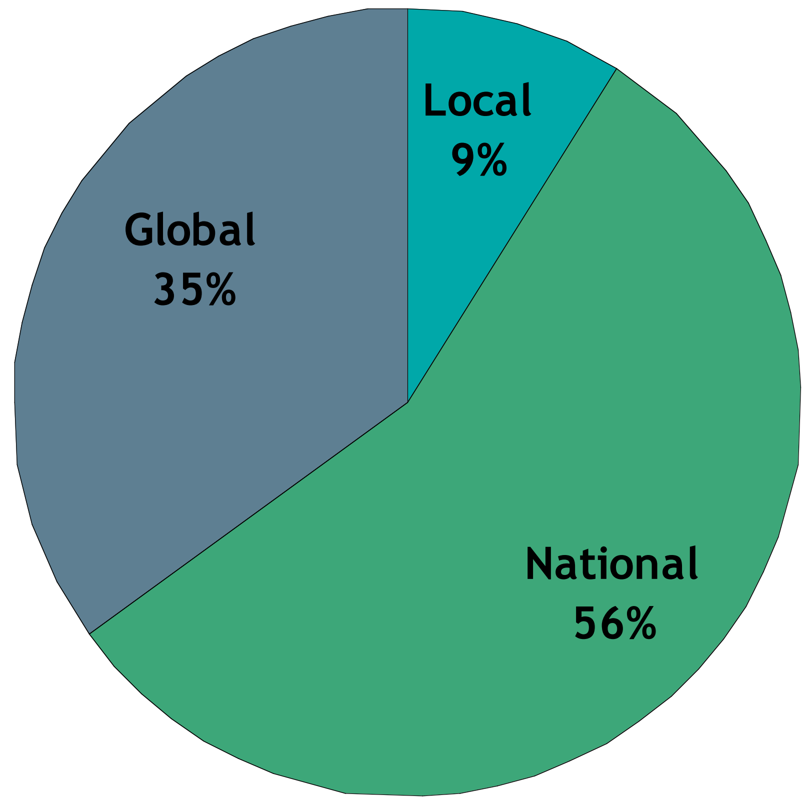
Varied Products and Services (over 100 6-digit NAICS codes)



- **Operating Services**
  Lab testing, equipment repair
- **Operating Supplies**
  Valves, bearings, gaskets, seals
- **Engineering and Consulting Services**
  Optimization studies, market research
- **Machinery and Equipment**
  Rolling mills, furnaces, pollution control
- **Raw Materials**
  Coal, coke, iron ore, scrap metal

Non-Regional Markets

Steel suppliers as a source of regional export income for Pittsburgh



Some Suppliers Have Key Local Links

Key Linkages in the Pittsburgh Region	**Number of Respondents**	**Share of Locally-linked Suppliers**
Key Suppliers	12	23%
Key Partners	17	32%
Key Networks	13	25%
One or More Key Contacts	**29**	**55%**
Product Collaboration	29	55%
Marketing Collaboration	37	70%
Total in Collaboration	**45**	**85%**
All Locally-linked Suppliers	***53***	***100%***

Some Suppliers Do Not

	Respondents who are not collaborating on:	
Reason for not collaborating:	**Product Development**	**Marketing**
Not relevant to business	52%	58%
Raises competition concerns	30%	21%
Collaborate with non-Pittsburgh firms	17%	17%
No time for collaboration	0%	4%

Regional Linkages and Firm Age

- Started before 1980:
  - 60% of locally linked firms
- Started after 1980:
  - 67% of firms without local linkages

"Having been in this business for 35 years, I know most of the key players/firms in the area and can use that network to obtain information."

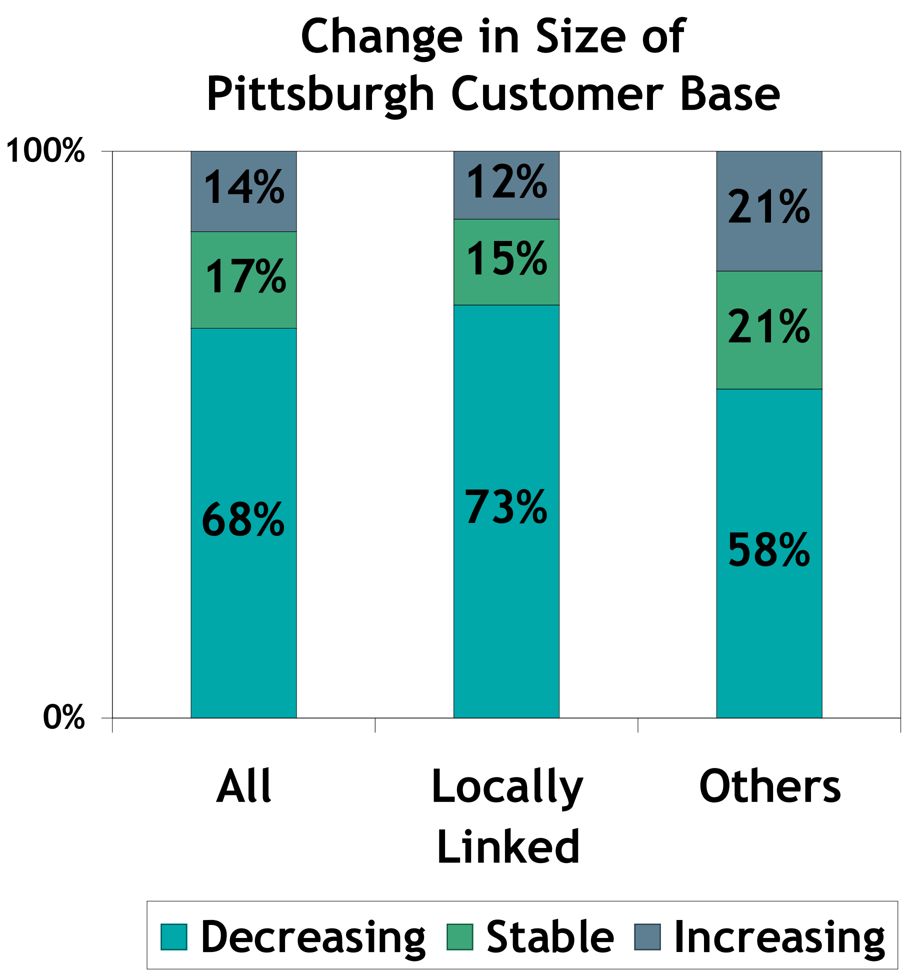
—Engineering service firm with local linkages

Regional Linkages and Steel Markets

Steel Market Trends	All Suppliers	Locally Linked Suppliers	Other Suppliers
Majority of Sales to the Steel Industry	65%	61%	75%
Rising Absolute Share	49%	43%	63%
Rising Relative Share	30%	30%	29%
Overall Trend			
Shrinking Steel Share	37%	45%	21%
Growing Steel Share	33%	27%	46%

"We now deal in the automotive industry, aerospace industry, heavy equipment industry, and the defense industry. Steel plants are still a part of our business, but not nearly as important as they used to be."
—Locally Linked Equipment Maker

Regional Linkages and Local Markets



"We simply had to go from an initial marketing plan of local supplier to a national plan to survive and grow"

—Raw Material Supplier

Regional Linkages and Labor Markets

Labor Category	All Suppliers	Locally Linked	Others
Pittsburgh Search Focus			
Unskilled Labor	38%	42%	29%
Skilled Labor	44%	47%	37%
Professional and Technical Labor	38%	43%	26%
Over 60% of workforce from Pittsburgh	75%	83%	58%

Regional Linkages and Universities

University Role in:	*"Not at all Important"*	*"Very Important"*
Product Development	56%	6%
Technical Support	55%	5%
Professional & Technical Hires	36%	10%

Regional Development Implications

- Raise profile of traditional industries
- Begin university dialogue with steel industry supplier community
- Assist communication opportunities
- Recognize value of cluster as source of regional export income and well-paid jobs