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PITTSBURGH ECONOMIC QUARTERLY

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THE PITTSBURGH CLUSTER OF SUPPLIERS TO THE STEEL INDUSTRY: A CLUSTER UNDER A BUSHEL BASKET

By Carey Durkin Treado

Industrial development typically focuses on companies that are grouped by what they make. Regional industrial development often attempts to encourage product-based clusters—such as biotechnology, robotics, and electro-optics—to flourish locally. One of the central advantages of focusing on such product-based clusters is simply that their cluster is easily defined by government statistics. Thus, the relative success of product-based clusters can be measured and tracked, both locally and nationally.

However, there are other industrial clusters that can prove vitally important to regional development, but are not easily identifiable with government data. Hidden clusters often consist of firms who share a common customer or downstream industry, rather than a common product-line. The Pittsburgh region has a successful customer-based cluster, whose light has been hidden from view—specifically, a cluster of suppliers to the steel industry. The basket that hides the importance of this cluster to our region has been largely formed by the limitations of government codes and statistics, but is

partially the result of mistaken assumptions about the current relevance of the steel industry to our economy.

When the steel industry restructured in the 1980s, Pittsburgh suffered an economic setback that has few historical parallels among major American metropolitan regions. However, many of the firms that were located in Pittsburgh to supply the steel industry have remained a vibrant industrial cluster, providing high-wage jobs and attracting new firms. In short, the steel supplier cluster has been a source of economic resilience for the region, even if it is a relatively unrecognized source.

Pennsylvania currently has less than 6 percent of operational steel-making capacity, but the state retains one-fourth of the companies that identify themselves as suppliers to the steel industry and nearly one-half of the raw material and machinery and equipment suppliers to the steel industry. The majority of these firms are located in and around the Pittsburgh metropolitan region, with many local supplier firms representing national headquarters for large corporations. The variety of goods and services provided by these firms is substantial, ranging

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RETAIL TRADE IN PITTSBURGH

By Christopher Briem

The Economic Census compiled by the U.S. Census Bureau profiles business establishments in the United States every five years. In May 2005, the Economic Census released its report on the retail trade industry in Pennsylvania for 2002. A perennial question in recent decades has been whether there are adequate levels of

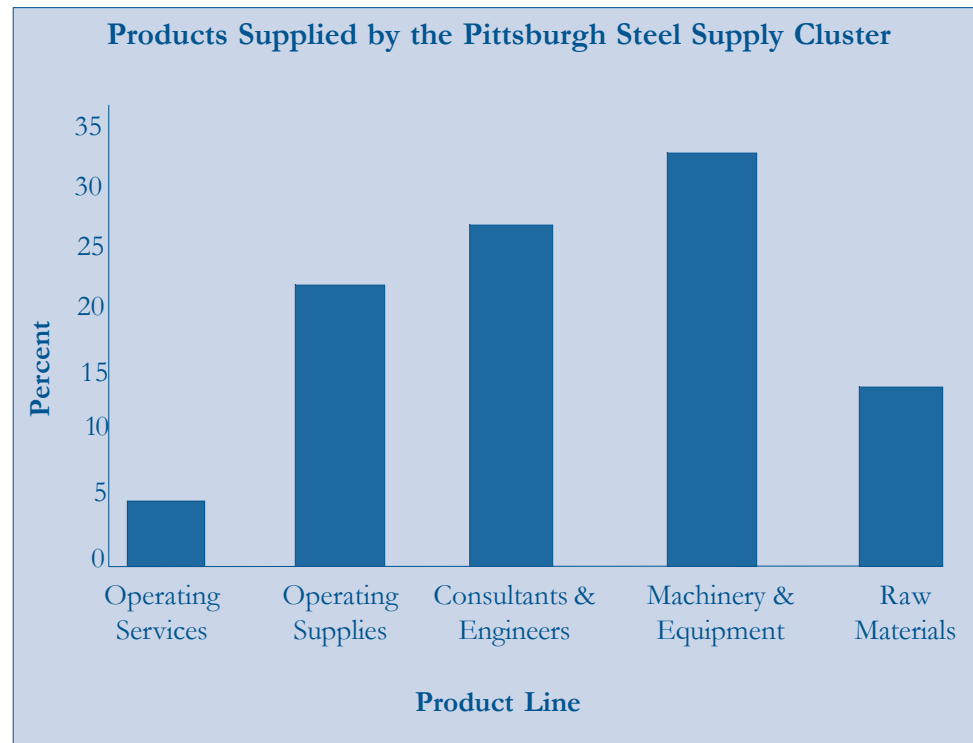
retail trade activity in the region, and in particular the city of Pittsburgh. The Economic Census provides data on the number of establishments and sales that can be used to follow trends in the retail trade industry within the region.

Total retail sales within the city of Pittsburgh increased from \$3.1 billion in 1997 to \$3.6 billion in 2002 after

adjusting for inflation. The city of Pittsburgh's 16% increase in total sales occurred while population decreased by 5% over that time. The per capita increase in sales within the city increased 22% from \$8,873 in 1997 to \$10,858 in 2002. Comparable change in retail sales per capita over the same period was 1.4% for Allegheny County,

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THE PITTSBURGH CLUSTER OF SUPPLIERS TO THE STEEL INDUSTRY (CONT.)



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from basic materials to cutting edge technologies in systems engineering, process controls, and metals casting and rolling. The figure above identifies the central product lines of regional suppliers to the steel industry.

This industry cluster is “lost” to policymakers because the firms involved do not share an identifying industry code that links them in national statistics to steel production or to each other, but they have not been lost to our economy. In order to learn more about the structure of this cluster and its ties to our region, the Center for Industry Studies has worked with the Association of Iron and Steel Technology (AIST) and with UCSUR to survey regional steel suppliers.

The University of Pittsburgh’s Center for Industry Studies (www.industrystudies.pitt.edu) was profiled in the September 2004 issue of *PEQ* (Frank Giarratani, “Research in Industry Studies”).

We report on the preliminary findings of that survey in this article. In future reports, we will explain what

these firms do and why they do it in the Pittsburgh region. We also will recommend how policymakers can take advantage of our findings to help support this valuable foundation for economic activity in the region.

The AIST identified 289 regional firms in the steel supplier industry. The survey respondents include 77, or 27%, of these firms. These firms range from small, recently-formed suppliers to large, multinational enterprises. About two-thirds of the survey respondents are single-plant firms, and over half of those plants have fewer than 20 employees. Using the employment ranges provided by the respondents, the single plant firms represent roughly 2,000 employees, with the multi-plant firms adding at least another 2,000 employees in the Pittsburgh region.

Using separate data derived from the Quarterly Census of Employment and Wages (ES202), the total employment in the steel supplier industry in the Pittsburgh region is estimated to have been 12,121 workers in 2003 with a combined total

payroll of \$687 million. The average annual wage for these workers is \$56,669, which is 58% above the average wage and salary disbursements in the region of \$35,976 in 2003.

Although steel-related industry in the region has the reputation of being comprised of older, more established firms, one-third of the survey respondents started operations in the Pittsburgh region after 1990. Nearly one-half of the smallest firms (less than 20 employees) have start dates after 1990. These data indicate an important dynamic element of entrepreneurial start-ups within the cluster.

In addition to the entrepreneurial element, Pittsburgh remains an important national and international headquarters for many large, multinational steel suppliers. Of the multi-plant firms, about 60% have their U.S. headquarters in the Pittsburgh region and 30% have their international headquarters in the region.

Over two-thirds of respondents focus the majority of their sales efforts on the steel industry, with nearly all of the respondents having made a sale to the steel industry within the last six months (see figure). This also demonstrates that, although the cluster firms concentrate on the steel industry, they are not captive suppliers and also sell to non-steel markets.

Of course, with the regional decline in steel capacity, Pittsburgh-based suppliers cannot afford to have a regional marketing focus either. Over half of the respondents focus their sales effort on national markets and about one-third on global markets. In addition, nearly half of the respondents report that total sales to the steel industry are increasing, even though steel sales are declining as a proportion of their overall sales.

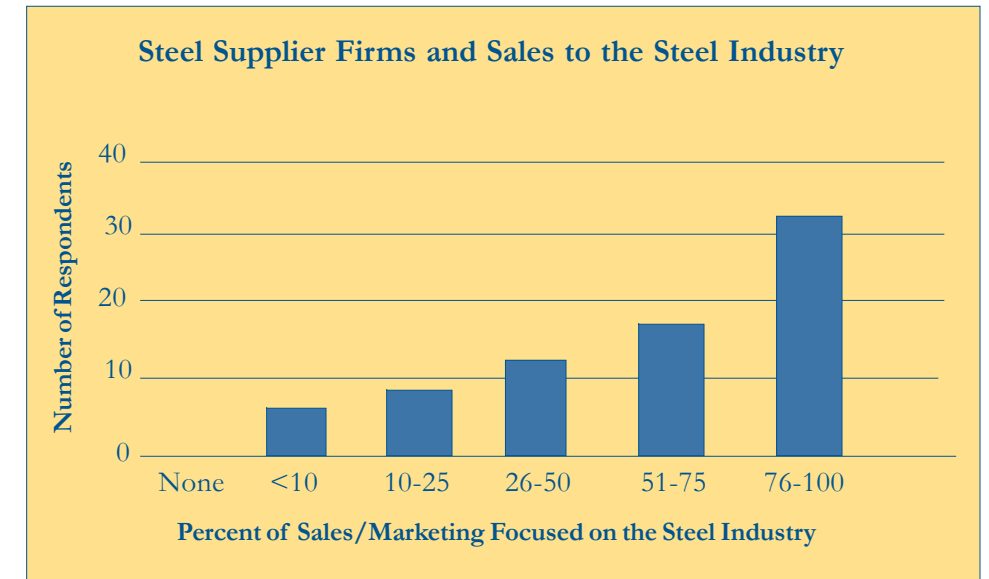
Although the sales and marketing efforts are focused on broader geographic regions, many of the respondents report that their location in Pittsburgh is an important source of

key partners, suppliers, and industry networks. About 38% of the respondents reported that one or more of these key business factors were Pittsburgh-based. This issue is important for further study, since several of the respondents have indicated that the Pittsburgh region has a reputation as “one-stop shopping” for the steel industry, where steelmakers can readily find, for example, a partnership that combines engineering design and high-tech equipment supply.

Preliminary survey results also indicate that the regional labor supply is an important source of stability for the steel supplier cluster. Three-fourths of the respondents report that the majority of their workforce is recruited locally, with nearly 40% reporting that their entire workforce was recruited locally. Thus, it is not surprising that 60% of the respondents report that their location in the Pittsburgh region is a positive or critical factor in labor retention.

Not only is the local labor supply important to the firms individually, it appears to be an important factor in creating the cluster as well. Over two-thirds of respondents have either recruited an employee from, or lost an employee to, another Pittsburgh-area steel supplier. Labor movement between firms in a regional cluster is an indicator of a cluster’s cohesiveness and can be an important method for shared information and technology development.

This brief synopsis clearly points to the vitality of the Pittsburgh cluster of suppliers to the steel industry. The cluster includes both small plants and national headquarters of larger firms, many of which started up *after* the region had lost most of its traditional steel base. The participants in the cluster report strong and growing sales of a diverse array of products and services to the steel industry, both nationally and globally. In addition, regional steel suppliers identify the benefits of being in the cluster—access to customers, suppliers, networks, and



labor—as the most important benefits of locating in the area.

We expect our final results to further clarify the vitality and importance of this cluster to the Pittsburgh economy and to provide more detailed descriptions of the regional market conditions faced by the firms within the cluster. Our results should enable regional policymakers, development experts, and university administrators to shape specific policies that would support the further development of the cluster.

Regional analysis and historical experience teach us that every major region should expect decline in some of its key industries over time, but what sets some regions apart from others is their ability to rebound from such loss and find rejuvenation in new activities. Nearly 50 years ago, a major study of the Pittsburgh region, sponsored by the

Pittsburgh Regional Planning Association, speculated that the scale of steel manufacturing in this region would limit the region’s ability to respond. The reasoning was sound: firms linked to steel production as suppliers had a strong local market, but little experience exporting their services beyond our regional boundaries.

However, survey respondents in Pittsburgh’s cluster of steel suppliers demonstrate that today’s firms export very well, indeed. Today, the resilience of the Pittsburgh economy continues to be evident, and Pittsburgh’s historically signature industry — steel — remains an important contributing factor to the region’s vitality.

Carey Durkin Treado is a Research Associate at the Center for Industry Studies, University of Pittsburgh.

2003 Steel Supplier Industry, Pittsburgh MSA

Average employment	12,121
Total wages	\$686,895,304
Average annual wage	\$56,669

Source: compiled from ES 202 employment data

POPULATION CHANGE IN THE PITTSBURGH REGION 2000-2004

By Christopher Briem

The latest estimates from the Census Bureau show that the Pittsburgh region continues to lose population. Between 2000 and 2004, the Pittsburgh region's population declined by just over 1.2%. The Pittsburgh Metropolitan Statistical Area (MSA) was redefined in 2003 and currently includes seven counties in Southwestern PA: Allegheny, Armstrong, Beaver, Butler, Fayette, Washington and Westmoreland.

Only two counties in the region grew in population between 2000 and

2004, Butler and Washington. Butler County remains the region's fastest growing county, with population increasing by 3.8% since 2000. The other five counties in the region declined between 2000 and 2004. Allegheny County experienced the largest population decline, falling by 2.4% since 2000, followed by Fayette County, where population fell by 2.0% (see Page 6).

Pittsburgh's rate of population loss since 2000 is the largest population decline among the nation's 25 largest

Metropolitan Statistical Areas (see below). For the Pittsburgh region, population loss since 2000 is balanced between natural population decrease and population loss through migration (see *PEQ*, Fall 2003).

Natural population decrease occurs when the number of deaths exceeds the number of births in a given year, and Pittsburgh is now the only region among the largest 25 MSAs to experience natural population decrease. The concentration of elderly in the region, coupled with relatively

lower fertility rates, is a major factor for this unusual occurrence.

Migration from the region includes both international and domestic destinations. People leaving the Pittsburgh region for other destinations include both younger and older age cohorts. Like most northern regions, Pittsburgh typically experiences net out-migration of retirement-aged cohorts to retirement regions in the south and west.

Pittsburgh's relatively low international immigration and natural

population decline makes it one of only two large MSAs to lose population between 2000 and 2004. Though Pittsburgh's population loss due to domestic migration is exceeded by 10 other top 25 metropolitan regions, its natural population decrease and negative net international migration are both the lowest among these MSAs.

Annual population estimates are produced by the U.S. Census Bureau's population estimates program. The MSA level data presented here has been compiled from the Census

Bureau's county population estimates. The Census Bureau develops county population estimates from public records including birth and death certificates, Internal Revenue Service (IRS) county to county migration data, Medicare enrollment records, Armed Forces data, and group quarters population data.

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Population and Components of Change, Top Metro Areas, 2000 and 2004

Metropolitan Statistical Area ¹	Year		Population ² Change		Net Migration 2000-2004 ³				Natural Increase (Births-Deaths)	
	2000	2004	Number	%	Domestic Number	% ⁴	International Number	% ⁴	Number	% ⁴
1. New York-Northern New Jersey-Long Island	18,358,957	18,709,802	+350,845	+1.9%	-884,693	-4.8%	+730,108	+4.0%	+486,120	+2.6%
2. Los Angeles-Long Beach - Santa Ana	12,402,817	12,925,330	+522,513	+4.2%	-498,728	-4.0%	+545,215	+4.4%	+486,932	+3.9%
3. Chicago-Naperville-Joliet	9,119,706	9,391,515	+271,809	+3.0%	-266,357	-2.9%	+259,285	+2.8%	+282,051	+3.1%
4. Philadelphia-Camden-Wilmington	5,693,583	5,800,614	+107,031	+1.9%	-37,924	-0.7%	+64,175	+1.1%	+84,580	+1.5%
5. Dallas-Fort Worth -Arlington	5,196,340	5,700,256	+503,916	+9.7%	+77,368	+1.5%	+196,361	+3.8%	+253,302	+4.9%
6. Miami-Fort Lauderdale- Beach	5,028,727	5,361,723	+332,996	+6.6%	-24,761	-0.5%	+280,680	+5.6%	+95,187	+1.9%
7. Houston-Baytown -Sugar Land	4,741,338	5,180,443	+439,105	+9.3%	+51,045	+1.1%	+177,457	+3.7%	+225,695	+4.8%
8. Washington-Arlington -Alexander	4,821,321	5,139,549	+318,228	+6.6%	-13,776	-0.3%	+167,798	+3.5%	+180,380	+3.7%
9. Atlanta-Sandy Springs-Marietta	4,281,592	4,708,297	+426,705	+10.0%	+139,207	+3.3%	+122,060	+2.9%	+187,092	+4.4%
10. Detroit-Warren-Livonia	4,458,399	4,493,165	+34,766	+0.8%	-111,180	-2.5%	+60,858	+1.4%	+85,293	+1.9%
11. Boston-Cambridge-Quincy	4,401,504	4,424,649	+23,145	+0.5%	-171,949	-3.9%	+112,126	+2.5%	+87,586	+2.0%
12. San Francisco-Oakland-Fremont	4,136,830	4,153,870	+17,040	+0.4%	-248,286	-6.0%	+167,987	+4.1%	+105,550	+2.6%
13. Riverside-San Bernardino Ontario	3,279,069	3,793,081	+514,012	+15.7%	+338,395	+10.3%	+66,513	+2.0%	+127,842	+3.9%
14. Phoenix-Mesa Scottsdale	3,277,946	3,715,360	+437,414	+13.3%	+206,048	+6.3%	+113,215	+3.5%	+138,348	+4.2%
15. Seattle-Tacoma-Bellevue	3,052,072	3,166,828	+114,756	+3.8%	-33,297	-1.1%	+72,152	+2.4%	+74,527	+2.4%
16. Minneapolis-St. Paul-Bloomington	2,981,127	3,116,206	+135,079	+4.5%	-9,405	-0.3%	+49,455	+1.7%	+101,754	+3.4%
17. San Diego-Carlsbad-San Marcos	2,824,591	2,931,714	+107,123	+3.8%	-60,546	-2.1%	+75,654	+2.7%	+97,967	+3.5%
18. St. Louis	2,724,692	2,787,701	+63,009	+2.3%	-12,556	-0.5%	+18,868	+0.7%	+40,356	+1.5%
19. Baltimore-Towson	2,557,396	2,639,213	+81,817	+3.2%	-1,356	-0.1%	+22,899	+0.9%	+41,586	+1.6%
20. Tampa-St. Petersburg-Clearwater	2,404,323	2,587,967	+183,644	+7.6%	+151,182	+6.3%	+39,526	+1.6%	+2,617	+0.1%
21. Pittsburgh	2,429,259	2,401,575	-27,684	-1.1%	-25,150	-1.0%	+11,039	+0.5%	-14,013	-0.6%
22. Denver-Aurora	2,193,557	2,330,146	+136,589	+6.2%	-7,709	-0.4%	+62,765	+2.9%	+91,098	+4.2%
23. Cleveland-Elyria-Mentor	2,148,166	2,137,073	-11,093	-0.5%	-52,278	-2.4%	+16,361	+0.8%	+21,820	+1.0%
24. Portland-Vancouver-Beaverton	1,936,019	2,064,336	+128,317	+6.6%	+34,825	+1.8%	+47,168	+2.4%	+51,749	+2.7%
25. Cincinnati-Middletown	2,014,485	2,058,221	+43,736	+2.2%	-8,364	-0.4%	+11,836	+0.6%	+42,627	+2.1%

¹MSA definitions reflect 2003 OMB definitions.
²Populations reflect estimate as of July 1 of each year.
³Reflects April 1, 2000 Census.
⁴Percent reflects change from 2000 base population.

POPULATION CHANGE IN THE PITTSBURGH REGION (CONT.)

Southwestern Pennsylvania and Pennsylvania Population Change Since 2000

	Population (July 1st of each year)			Natural Population Change			Net Migration			
	2000	2004	Change	Births	Deaths	Net	Inter-national	Domestic	Total	
Pennsylvania	12,286,268	12,406,292	120,024	1.0%	577,153	521,443	55,710	81,518	-13,595	67,923
Allegheny	1,279,816	1,250,867	-28,949	-2.3%	55,295	60,964	-5,669	9,066	-31,602	-22,536
Armstrong	72,317	71,395	-922	-1.3%	2,785	3,615	-830	24	-85	-61
Beaver	181,157	178,601	-2,556	-1.4%	7,266	8,714	-1,448	215	-1,241	-1,026
Butler	174,588	180,663	6,075	3.5%	8,129	7,168	961	367	4,847	5,214
Fayette	148,521	145,651	-2,870	-1.9%	5,970	7,377	-1,407	82	-1,478	-1,396
Washington	203,041	205,738	2,697	1.3%	8,272	9,934	-1,662	257	4,191	4,448
Westmoreland	369,819	368,660	-1,159	-0.3%	13,824	17,782	-3,958	474	2,489	2,963
Pittsburgh MSA	2,429,259	2,401,575	-27,684	-1.1%	101,541	115,554	-14,013	10,485	-22,879	-12,394
Indiana	89,530	89,062	-468	-0.5%	3,335	3,668	-333	324	-414	-90
Greene	40,684	40,133	-551	-1.4%	1,548	1,843	-295	40	-280	-240
Lawrence	94,625	93,374	-1,251	-1.3%	4,053	4,906	-853	87	-443	-356
3 Subtotal	224,839	222,569	-2,270	-1.0%	8,936	10,417	-1,481	451	-1,137	-686
10 County SW PA Region	2,654,098	2,624,144	-29,954	-1.1%	110,477	125,971	-15,494	10,936	24,016	13,080

Source: U.S. Census Bureau

RETAIL TRADE IN PITTSBURGH (CONT.)

continued from page 1

4.4% for the Pittsburgh region and 3.5% for Pennsylvania.

A large part of the increase in retail sales in the city of Pittsburgh derived from sales of "nonstore retailers" which the Economic Census shows as having grown five fold between 1997 and 2002. Nonstore retailers include electronic shopping, mail-order houses, vending machine operators, and direct sellers, such as fuel dealers. The 2002 Economic Census does not provide details on changes within these sub-sectors. Excluding nonstore retailers, total retail sales in the city of Pittsburgh increase by 6.1% between 1997 and 2002, or 11.7% in terms of retail sales per capita.

In the City of Pittsburgh, building material and garden equipment suppliers saw the largest decline in sales, down 33% between 1997 and 2002, followed by gasoline stations, down 10.9%, and sporting good retailers, down 10.7%. Other than nonstore retailers, the largest increase came from general merchandise stores increasing in both the number of stores (by 17%) and overall sales (by 77%).

Since 2002, additional developments in the retail trade industry in the City of Pittsburgh have been ongoing. One large project, the 34-acre former LTV site on the South Side, opened in 2005 with a mix of retail, residential and office space. Retail development

at that site is expected to continue. Losses include the closings of the Lazarus and Lord & Taylor department stores downtown. In the county, continuing growth at the Waterfront in Homestead is likely to shift retail activity within the region, as will the opening of the 340-acre Pittsburgh Mills mall in Frazer.

Retail Trade Industry Changes in the Pittsburgh Region: 1997-2002

		Population	Estabs	Estabs Per 1,000	Sales (2002\$)	Sales Per Capita
City of Pittsburgh	1997	345,116	1,544	4.5	3,062,172	\$8,873
	2002	327,968	1,415	4.3	3,561,046	\$10,858
	Change 97-02	-5.0%	-8.4%	-3.6%	16.3%	22.4%
Allegheny County	1997	1,280,353	5,353	4.2	14,481,209	\$11,310
	2002	1,266,196	5,006	4.0	14,522,461	\$11,469
	Change 97-02	-1.1%	-6.5%	-5.4%	0.3%	1.4%
Pittsburgh MSA*	1997	2,387,092	9,664	4.0	24,037,785	\$10,070
	2002	2,342,698	9,113	3.9	24,629,433	\$10,513
	Change 97-02	-1.9%	-5.7%	-3.9%	2.5%	4.4%
Pennsylvania	1997	12,015,888	50,208	4.2	123,142,277	\$10,248
	2002	12,328,459	48,041	3.9	130,713,197	\$10,603
	Change 97-02	2.69%	-4.3%	-6.7%	6.1%	3.5%

*MSA definition for both 1997 and 2002 is the six-county Pittsburgh region (excludes Armstrong County)

Retail Establishments in the City of Pittsburgh: 1997 and 2002

	1997		2002		Change	
	Estabs	Sales(2002\$)	Estabs	Sales	Estabs	Sales
Motor vehicles & parts	104	532,594	83	588,835	-20.2%	10.6%
Furniture and home furnishings	73	110,027	68	111,549	-6.8%	1.4%
Electronics & appliances	55	114,601	58	127,576	5.5%	11.3%
Building material & garden equipment and supplies	104	311,624	70	208,103	-32.7%	-33.2%
Food & beverage stores	216	600,909	222	623,736	2.8%	3.8%
Health & personal care	155	239,113	138	287,452	-11.0%	20.2%
Gasoline stations	91	173,430	78	154,503	-14.3%	-10.9%
Clothing & clothing accessories	284	345,233	279	339,741	-1.8%	-1.6%
Sporting goods, hobby, book & music	145	157,727	108	140,881	25.5%	-10.7%
General merchandise	35	285,394	41	488,450	17.1%	71.1%
Miscellaneous	239	132,159	221	123,057	-7.5%	-6.9%
Non-store retailers	43	59,361	49	367,163	14.0%	518.5%
Total	1,544	3,062,172	1,415	3,561,046	-8.4%	16.3%

Source: Economic Census 1997 and 2002, U.S. Census Bureau