The Migration of U.S. Manufacturing and Its Impact on the Buffalo Metropolitan Area

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I. Introduction and Summary of Conclusions

At one time, Buffalo was a major hub of United States economic activity. Located at the end of the Erie Canal, it was an important trans-shipment point for goods moving to and from the Midwest. Later, it became a major railroad center, spawning investments in a variety of industries, including iron and steel-making.

Unfortunately, Buffalo's unique location in the 19th century became a handicap in the late 20th century. Once a manufacturing center, Buffalo began to lose industry jobs and investment after World War II. As population and industrial activity steadily shifted to the South and West, all of the Middle Atlantic and New England states were de-industrialized. In part, this was simply the result of the superior transportation logistics available in the country's mid-section, but it also reflected investors' desires to escape from a system of industrial relations that had become fossilized. Buffalo could not escape from these twin legacies of a poor location and a bad heritage of labor relations that plagued one of its major industries, steel.

A large share of the decline in manufacturing in the Buffalo area is attributable to a loss of metals and metals-related production. In the first twenty-five years after World War II, Buffalo was still a major steel production center, and metals-related jobs accounted for 60 percent of manufacturing employment. In the next twenty-five years, more than half of those jobs would disappear. Similar declines occurred in other eastern steel-producing centers; Buffalo was not unique.

The major findings of this paper may be summarized briefly:

- Manufacturing's share of the overall U.S. economy has declined steadily for the last 50 years.

- The share of U.S. manufacturing activity located in the Northeast – the Middle Atlantic and New England Census Regions – has declined steadily for more than 25 years.

- Buffalo's decline as a manufacturing center was not appreciably greater than the general decline in manufacturing throughout the Northeast.

- Metals-related manufacturing continues to be a very large share of U.S. manufacturing, but Buffalo has not been able to retain its share of this important part of the manufacturing sector.

- Buffalo lost a large share of metals-related manufacture because two of its major employers in this sector industry were integrated steel companies who, like all integrated U.S. steel companies, could not compete with the more efficient minimills.

- Given the heritage of unionization in the Middle Atlantic Region in general, and Buffalo in particular, new minimill steel plants and automotive assembly plants have not been built in Buffalo or anywhere else in the Middle Atlantic Region.

- Buffalo has no particular comparative advantage in the new high-technology industries; therefore, it is not an important manufacturing center for such products.

- Buffalo's sharp decline in chemical manufacturing does not reflect the general trend in New York state. New York remains among the four largest chemicals-producing states in the country.

- Buffalo continues to be an important motor vehicle components manufacturing center because of its proximity to Canadian motor-vehicle assembly plants and the continuation of the U.S.-Canada Auto Pact of 1965 that requires U.S. vehicle companies to continue to assemble large numbers of vehicles in Canada. As long as this pact remains in force, the Buffalo area should continue as an important automotive-components manufacturing center.

II. The Steady Decline in Northeastern Manufacturing

Any analysis of the reasons for Buffalo's decline as a manufacturing center must be placed in the context of national and regional trends in U.S. manufacturing. Given the declining relative position of manufacturing in most developed countries, it is hardly surprising that a U.S. metropolitan area that has specialized in manufacturing has suffered a decline over the past 50 years. And if that area is located in the Northeast, it is even less surprising that it has lost manufacturing jobs. Manufacturing is relatively less important in the U.S. today than it was just after World War II, and it has shifted decidedly away from the Northeast.

Manufacturing has declined in importance in the United States. In 1959, for example, manufacturing accounted for 27.7 percent of nominal U.S. Gross Domestic Product. By 1999, the share had fallen 16.1 percent.[1] Similarly, the share of employment attributable to manufacturing has declined. In 1959, 31.3 percent of non-farm employment was in the manufacturing sector; by 1999, this share had been more than halved to 14.4 percent.[2]

Not only has U.S. manufacturing declined in relative importance, but it has shifted dramatically away from the Northeast. New England began to lose manufacturing jobs after World War II.[3] Between 1947 and 1972, it lost 25 percent of manufacturing production jobs despite the fact that manufacturing employment increased by 10 percent over the entire country.

[1] U.S. Department of Commerce, Bureau of Economic Analysis. The two numbers are not strictly comparable since the 1959 share is based on the 1972 SIC classification of industries while the 1999 share is based on the 1987 SIC classification. In addition, the share of *real* GDP in 1999 was marginally higher at 17.2 percent.
[2] Bureau of Labor Statistics, *Employment and Earnings,* Annual Establishment Data.
[3] See Robert W. Crandall, *Manufacturing on the Move*, Brookings, 1993, Chapter 1, for a discussion of these trends.

By 1997, manufacturing production jobs in New England had declined to just 50 percent of their 1947 number and represented only 5 percent of U.S. production workers in manufacturing.[4]

The Middle Atlantic states – New Jersey, New York, and Pennsylvania – suffered a similar fate, but their decline began somewhat later. In 1954, these states still accounted for about 26 percent of U.S. manufacturing, whether measured by value-added or production workers, about the same share as in 1947. By 1997, however, these states' share of manufacturing value added and production-worker employment had fallen to about 12 percent[5] (see Table 1). Given that total U.S. manufacturing employment was virtually the same in 1997 as in 1954, despite a more than doubling of the civilian labor force, the share of these states' manufacturing workers in *total U.S. employment* has fallen by about 80 percent since 1954.

TABLE 1
The Relative Decline of Manufacturing in the Middle Atlantic Region
1954-1997

	1954	1972	1997
Value-Added ($ billions)			
United States	116.9	354.0	1,825.7
Middle Atlantic Region	30.4	70.3	211.4
Middle Atlantic Share of U.S. Total	0.26	0.20	0.12
Production Workers (thousands)			
United States	12,372	13,526	12,065
Middle Atlantic Region	3,212	2,638	1,402
Middle Atlantic Share of U.S. Total	0.26	0.20	0.12

Source: U.S. Bureau of the Census, *Census of Manufactures*.

The Buffalo area's experience is only marginally worse than that of the entire Middle Atlantic region on whose northwestern fringe it is located, Manufacturing employment in the

[4] U.S. Bureau of the Census, *Census of Manufactures*.

[5] Throughout this paper, I will focus predominantly on *production workers* in manufacturing rather than *total employment* because the Census of Manufactures reclassified certain non-production establishments of manufacturers, making it difficult to compare the 1997 data on total manufacturing employment with earlier Censuses of Manufactures.

Buffalo metropolitan area (MSA)[6], measured by production workers, declined by 61.6 percent between 1954 and 1997, but it declined by 56.4 percent in the entire Middle Atlantic region over the same period. By contrast, the total number of U.S. manufacturing production workers remained virtually constant during this period. Outside New England and the Middle Atlantic states, manufacturing employment actually increased by 2 million over these 43 years, an increase of 25 percent. Thus, manufacturing is not declining everywhere. It is just shifting away from the Northeast and growing somewhat more slowly than the economy as a whole.[7]

III. Manufacturing in Buffalo – Now and Then

Buffalo's manufacturing base in the post-World War II period was fairly heavily concentrated in metals-related activities. In 1954 and 1972, 60 percent of manufacturing employment in the Buffalo MSA was concentrated in the metals and metals-related sectors – SIC's 33 through 37. (Table 2) These industries include a variety of metal, metal fabricating, and equipment industries, including industrial, agricultural, and transportation equipment. Buffalo was a steel manufacturing center. As a result, the composition of its manufacturing sector was similar to that of other steel centers, such as Pittsburgh (PA), Cleveland (OH), Canton-Massilon (OH), Chicago (IL and IN), and Birmingham (AL).

TABLE 2
Production Workers in Manufacturing and the Metals/Machinery Industry, Selected MSAs, 1954 and 1972

	1954			1972		
Metropolitan Area	Metals-Related Industries	Total Manufacturing	Metals-Related Share	Metals-Related Industries	Total Manufacturing	Metals-Related Share
Buffalo	92,388	152,882	0.60	65,700	108,700	0.60
Canton-Massilon	33,769	45,351	0.74	26,400*	43,200	0.61
Cleveland	158,871	222,511	0.71	125,100	179,200	0.70
Youngstown	75,588	88,386	0.86	40,900**	69,200	0.59
Pittsburgh	174,656	239,450	0.73	120,000	165,900	0.72
Birmingham	31,717	46,169	0.69	34,000	53,500	0.64
Chicago***	390,110	718,642	0.54	389,400	682,200	0.57

Source: U.S. Bureau of the Census, *Census of Manufactures*.
Metals Related Industries include SICs 33,34,35,36, and 37.

[6] Metropolitan Statistical Areas (MSA's) are used by the federal government to provide statistical information for areas "containing a recognized population nucleus and adjacent communities that have a high degree of integration with that nucleus." See Office of Management and Budget, "Standards for Defining Metropolitan and Micropolitan Statistical Areas," *Federal Register*, Vol. 65, No. 249, December 27, 2000, p. 82228. Buffalo's MSA is comprised of Niagara and Erie Counties.

[7] Surprisingly, *real* manufacturing output grew more rapidly than the overall economy in the 1990s because greater productivity growth in manufacturing than in the overall economy led to a lower rate of increase in the prices of manufactures relative to the general inflation rate.

* Excludes SIC 36 (machinery) and 37 (transportation equipment). ** Excludes SIC 37.
*** Includes NW Indiana

Most of these steel-centered metropolitan areas were losing manufacturing jobs between 1954 and 1972, but the rate of decline would accelerate substantially over the next 25 years. (Table 3)

TABLE 3
Production Workers in Manufacturing,
Selected MSAs, 1954, 1972, and 1997

Metropolitan Area	1954	1972	1997	Percent Decline 1954-72	Percent Decline 1972-97
Buffalo	152,882	108,700	58,700	28.9%	46.0%
Canton-Massilon	45,351	43,200	31,900	4.7%	26.2%
Cleveland	222,511	179,200	120,200	19.5%	33.0%
Youngstown	88,386	69,200	37,900	21.7%	45.0%
Pittsburgh	239,450	165,900	70,200	30.7%	58.0%
Birmingham	46,169	53,500	34,000	(15.9)%	36.4%
Chicago*	718,642	682,200	457,300	5.1%	33.0%

Source: U.S. Bureau of the Census, *Census of Manufactures*.
* The CMSA, includes Gary, IN. Note: 1997 data exclude counties not in 1972 SMSAs.

Only Pittsburgh lost a larger share of its manufacturing jobs between 1954 and 1997 than Buffalo, but Youngstown was close behind. Of these major steel centers, only Canton-Massilon has retained at least two-thirds of its 1954 level of manufacturing production workers. Chicago, the least metals-intensive of these metropolitan areas, has only lost about one-third of its 1954 level of manufacturing jobs. As we shall see, the Chicago area, or more specifically the northern Indiana portion of the Chicago CMSA, is one of the few areas where the old Big Steel companies still have viable operations.

IV. The Fall and Rise of the Midwest

A decade ago, the industrial Midwest was being included with the Middle Atlantic states and even New England in a grouping called the "Rust Belt," whose industrial sector was oxidizing rapidly. But the last ten or fifteen years have witnessed a rebound in manufacturing employment in the states surrounding the Great Lakes. Indeed, as Table 4 shows, the Great Lakes states have generally outperformed the rest of the country in the growth of manufacturing jobs. This differential performance is due to one overwhelming fact: these Great Lakes states have retained the lion's share of U.S. motor vehicle production. With many large vehicle assembly plants still located in Illinois, Michigan, Indiana, and Ohio and others just south of them in Kentucky and Tennessee, the full panoply of steel, steel fabricating, and components industries remains in the Great Lakes states. The result has been that employment in the transportation equipment industry

in these five states has grown from 519,000 in 1972 to 556,000 in 1997, offsetting part of the decline in other metals-related employment.

TABLE 4
Manufacturing Production Workers, 1972-97

	1972	1987	1997	Percent Decline, 1972-97
Middle Atlantic Region	2,637,800	1,799,600	1,411,600	46.5%
Great Lakes Region	3,495,600	2,734,800	2,872,600	17.8%
United States	13,256,500	12,242,700	12,065,300	10.8%

Source: U.S. Bureau of the Census, *Census of Manufactures*.

The Middle Atlantic states, on the other hand have lost a large share of their employment in transportation industries, as well as all other metals-related industries, since 1972. Production workers in transportation equipment declined from 117,800 to 76,600, and production workers in all metals-related industries declined from 982,700 to 555,500 between 1972 and 1997. To understand the slide in manufacturing employment in the Middle Atlantic region in general, therefore, one must be able explain why this region could not retain jobs in the industries that use metals, particularly the transportation-equipment industries. As we shall see, Buffalo is somewhat of an exception in the Middle Atlantic region in that it has retained substantial automobile components manufacture.

V. Industry Specifics: Steel, Automobiles, and Computers

The metals, machinery, and transportation equipment industries were a major part of the U.S. manufacturing sector in the 1970s, accounting for 42.5 percent of manufacturing production workers in 1972. Buffalo, like Pittsburgh and Youngstown, was a major steel center because of its location on major waterways and railroad lines, inducing steel companies to locate there. As a result, 60 percent of its manufacturing workforce was in the metals-related industries. Any decline in the U.S. steel/machinery/ transportation equipment industries would obviously be likely to affect Buffalo more than many other areas of the country.

Surprisingly, employment in the metals-related manufacturing industries has not declined very much since 1954, and their share of manufacturing workers has actually risen. In 1954, the metals-related industries accounted for 40 percent of manufacturing workers; in 1997, they accounted for 45 percent. If one deducts computer-related equipment, including electronic components, the share is 37 percent in 1954, 1972, and 1997. (See Table 5) "Metal bashing" has clearly not declined in relative importance in manufacturing, even on a value-added basis. In 1954, the metals-related industries, exclusive of the predecessors to today's computer and electronics equipment industries, accounted for 40 percent of manufacturing value-added; in 1997, they accounted for 34 percent. If one includes computers and electronics, these industries have accounted for an increasing share of manufacturing value-added, rising from 43 percent in 1954 to 48 percent in 1997. Manufacturing's share of employment and nominal value added has

declined, but this decline is not due disproportionately to a loss of the metals-related sectors. These metals-related industries remain a major part of U.S. manufacturing, even in Buffalo.

TABLE 5
U.S. Manufacturing Employment and Value Added, 1954-1997

	Production Workers (thousands)			**Value-Added** ($ millions)		
Industry	1954	1972	1997	1954	1972	1997
Total Manufacturing	12,373	13,527	12,065	116,913	353,973	1,825,688
Primary Metals	939	923	480	9,373	23,258	68,749
Fabricated Metal Products	821	1,148	1,327	7,596	26,946	133,493
Machinery	1,171	1,267	936	12,339	37,563	137,935
Computers and Electronic Equipment*	(415)	(684)	877	(3,988)	(20,847)	252,630
Electrical Equipment	722	1,160	432	7,403	30,558	57,216
Transportation Equipment	1,327	1,246	1,341	13,926	39,799	227,511
Total Metals-Related	4,981	5,744	5,393	50,637	158,124	877,534
Total Metals-Related Less Electronics and Computers	4,566	5,060	4,516	46,649	137,277	624,904
Share of Metals-Related in Total Manufacturing	0.403	0.425	0.447	0.433	0.447	0.481
Share of Metals Related excl. Electronics and Computers in Total Manufacturing	0.369	0.374	0.374	0.399	0.388	0.342

Source: U.S. Bureau of the Census, *Census of Manufactures*.
Data in ( ) reflect workers in SICs 357 and 366 in 1954 and SICs 357, 365, 366 and 367 in 1972.
* Computer and Electronic equipment included in electrical equipment in 1954 and 1972.

The continuing importance of metals-related employment in an increasingly global marketplace reflects the substantial restructuring of these U.S. industries that has occurred since the 1970s. U.S. steel, machinery, and automobile companies had stagnated due to a variety of factors, including limited competition and a bad labor relations environment. But beginning in the 1980s, new entrants began to resuscitate these industries in a variety of ways.

Imports of steel, industrial equipment, and motor vehicles began to surge in the late 1970s and 1980s. This import pressure was met by a demand for trade protection that was often granted. Steel, automobiles, and motorcycles were provided with "temporary" protection, usually in the form of quotas administered to settle actual or threatened antidumping suits.[8]

This protectionism led foreign companies to begin to invest in United States production capacity. Firms, such as Nippon Kokan (steel), Toyota, Nissan, Honda, and Komatsu built or

[8] See Robert W. Crandall, "The Effects of U.S. Trade Protection for Autos and Steel," *Brookings Papers on Economic Activity*, 1987:2, for a review of the short-term effects of such protection.

acquired facilities in the United States. Virtually every major Japanese steel and automobile producer had plants and/or joint ventures in the United States by 1990. Somewhat later, some of the European motor vehicle companies – namely, Daimler Benz and BMW – began to build plants in the United States, and Daimler even acquired Chrysler. By contrast, the steel industry was reinvigorated by the entry of numerous smaller North American firms who built "minimill" plants which quickly wrested market share from the large, inefficient domestic steel giants.

None of these events helped Buffalo. Indeed, most had an extremely negative effect on manufacturing in the Middle Atlantic region in general and in Buffalo in particular.

A. Steel

By the 1970s, the large U.S. steel companies had found themselves trapped in their old plants and hostage to a collective bargaining process that virtually guaranteed substantial real wage increases. In addition, the legacy of labor-management conflict that began in the early part of the 20th century and resulted in the unionization of the industry in the 1930s and 1940s made it extremely difficult to develop modern, efficient production techniques. The result was stagnation and decline. No large U.S. steel company built a new plant after the mid 1960s, and no new blast furnace – the *sine qua* non of integrated steel manufacture -- was built after 1979.

This is not to say that no new steel plants were built in the United States. Indeed, nearly half of the industry's current output comes from plants that were built after Bethlehem completed the last Big Steel or "integrated" plant in the late 1960s. These new plants were built by upstart companies, such as Nucor, Co-Steel (Canada), Georgetown Steel, Steel Dynamics, Birmingham Steel, and Ipsco (Canada). All of these plants use electric furnaces to melt scrap, directly-reduced iron (DRI), and pig iron rather than the massive blast furnaces, coke ovens, and BOF steel furnaces used by the integrated firms. Equally important, virtually all of the new steel plants were built away from major metropolitan areas to minimize the probability that they would be organized by a trade union.

Figure 1 shows the location of more than 100 plants that produced carbon steel in 1970, most of which have since closed. Many of the closures were of marginal plants using small electric furnaces or the now-obsolete open-hearth integrated steelmaking process. However, a substantial number of the larger integrated plants operated by U S Steel, Bethlehem, Armco, Wheeling-Pittsburgh, Youngstown Sheet and Tube, Republic, and Jones and Laughlin were closed in the wake of minimill expansion and foreign competition.

Figure 2 shows the location of the dwindling number of integrated plants, all using blast furnaces and basic oxygen furnaces, and of the expanding minimill companies. Note the substantial reduction in the number of plants even though the industry's finished steel capacity has barely changed. It is noteworthy that there is little overlap between integrated-firm location and minimill location. The reason is simple: minimills hire far fewer workers and generally prefer to draw them from communities that have not been penetrated by unions.[9]

[9] For an early analysis of the likely effects of minimills, see Robert W. Crandall and Donald F. Barnett, *Up from the Ashes. The Rise of the Steel Minimill in the United States*. Brookings, 1986.

The minimills began slowly, displacing the integrated firms in the production of the simpler "long" products, such as bars, rods, and structural shapes. These were the products produced at one time by Republic Steel, Roblin Steel, Simonds Steel, and Bethlehem Steel in the Buffalo area.[10] By 1990, not only was Buffalo no longer competitive with the new minimills in these products, but no integrated U.S. producer could compete with them. The integrated companies closed virtually all of their long-product mills by the early 1990s. The minimills then began to produce the sheet steels, used in everything from barrels to BMWs, through a revolutionary new "thin slab casting" process that the integrated firms largely ignored. In the 1990s, a variety of minimill companies, including a few foreign and domestic joint ventures, built new steel sheet plants in smaller towns such as Crawfordsville (IN), Hickman (AR), Delta (OH), and Montpelier (IA). These plants produce sheet steel at a cost that is about 25 percent lower than production costs at the average remaining U.S. integrated plant.[11] The most efficient of these minimills actually showed a profit in 2001 despite historically low real prices caused by a worldwide steel glut.

The minimills have essentially sealed the fate of the large U.S. integrated producers and what is left of the steel centers they once populated. Steel is no longer produced in Buffalo, Youngstown,[12] or Bethlehem, and the last vestiges of steel production will soon disappear from Pittsburgh and Cleveland. The only major integrated steel centers that are likely to survive this decade are northern Indiana and Middletown (OH). The facilities in these two locations are the best of the remaining integrated plants, but even these plants likely have a limited life. Minor fragments may remain for a few years in areas such as Birmingham (AL), Detroit (MI), and Wheeling (WV). This does not mean that the Rust Belt is losing its steel industry; the industry has simply shifted south and west to areas within the Rust Belt and just outside it. As the steel industry fled major Rust Belt cities, it shed its unionized workforce and became much more efficient. Today it employs roughly 180,000 workers compared with 650,000 employed in the mid 1960s despite the fact that its finished-steel output is approximately the same.[13]

The surviving integrated companies, USX, AK Steel, Inland, Rouge, WHX, and Weirton cannot afford to rebuild their blast furnaces, and they cannot compete as minimills.[14] They have no hope of revival because they cannot build electric-furnace plants as inexpensively and operate them as efficiently the minimills given their existing management and labor-management relations. Only one, LTV, has tried to build such a plant (in conjunction with two foreign partners), but it failed miserably and sold the plant to the leading minimill company, Nucor, last year. Since then, LTV – the firm formed by mergers among Republic Steel, Jones and Laughlin, and Youngstown Sheet and Tube -- has entered bankruptcy for a second time, idled all of its facilities, and sold its steelmaking assets for virtually nothing. A multitude of others, such as

[10] Simonds produced some sheet and strip products in Lockport, NY.
[11] World Steel Dynamics, *Steel Strategist #26*, July 2000.
[12] There is one small minimill in Youngstown. Next door, in Warren (OH), the remnants of Republic's integrated plant remain in operation, but its prospects are at best uncertain.
[13] U.S. raw steel capacity has declined, but finished steel capacity has actually increased due to the introduction of continuous casting in the 1970s and 1980s.
[14] No industrialized-country steelmaker can now build new blast furnaces and operate them at a profit. There are no plans to build any such facilities in North America, Europe, Japan, or Australia today. See World Steel Dynamics, *Steel Strategist #26*, July 2000, pp. 55-57.

Bethlehem Steel, National Steel, Geneva Steel, Acme Steel, and Mc Louth have either filed for bankruptcy protection or disappeared altogether.

Steel is still very much tied to the transportation sector. Therefore, new minimill steel facilities are being built within a short distance of mid-western and southern motor vehicle assembly plants. Nucor has built sheet steel plants in Indiana, northeastern Arkansas (on the Mississippi River), North Carolina and South Carolina. Cargill Industries and the major Australian steel company, BHP, have built a plant in a small western Ohio town. Two Canadian companies have built one on the Ohio River in Kentucky. And an independent company, Steel Dynamics, has built one in northeastern Indiana. All of these plants are located on a major transportation route, generally an Interstate highway; none is located in a major urban area. More important for Buffalo, none is within hundreds of miles of the Middle Atlantic region or upstate New York, and none will be.[15]

The reasons for the shift in the location of steel mills are essentially two: unions and the logistics of raw-materials (including electricity) supply. All of the declining integrated steel companies, including the now bankrupt companies that once had plants in Buffalo, are or were unionized. Restrictive work rules, the resulting low productivity, and extremely high hourly compensation costs made all of these companies non-competitive. If their labor-management relations were as good as those of the minimills and if they otherwise well managed, they too could have built new electric-furnace based plants. They are not, and they therefore cannot. None has begun construction of a new blast furnace in 25 years. The old blast furnaces now require major renovations at prohibitive costs, mostly capitalized labor costs. Without sufficient hot-metal (blast furnace) capacity, the integrated firms have to import semi-finished steel or simply close. They have done a great deal of both. Their steel-making capacity is now less than one-half of what it was 25 years ago.

Buffalo's fate as a steel-making center was probably sealed when it did not survive as an automobile assembly center. In 1938, the city's Pierce-Arrow plant closed. In 1941, GM stopped producing Chevrolets in Buffalo and never resumed car production there. In 1958, Ford stopped producing automobiles at its Fuhrmann Road plant. Because the city was no longer an automotive assembly center, its steel companies did not invest in new sheet facilities in Buffalo. Bethlehem, the major Buffalo producer, did not modernize its flat-rolling capacity at Lackawanna, but chose instead to build that last new U.S. integrated plant in northern Indiana on Lake Michigan. Republic Steel had no sheet facilities in Buffalo.[16]

The declining importance of Buffalo as a center of waterborne commerce after the opening of the Welland Canal and then the St. Lawrence Seaway further reduced the attractiveness of the Buffalo area as a manufacturing center. Moreover, the end of the steam era

[15] There is one minimill in New York state, Auburn Steel, which was built by Japanese owners in the 1970s and was recently purchased by Nucor, the country's largest minimill.

[16] Some have attributed the decline of manufacturing in Buffalo to the lack of investment in its older plants and high wage rates. (" Adjustments in Buffalo's Labor Market," *Quarterly Review*, Federal Reserve Bank of New York, Winter 1985-86, pp. 28-37.) While these observations are correct for Buffalo's erstwhile steel operations, it is doubtful that steel could have survived even if wages had been lower. Buffalo's location and industrial-relations climate made it unattractive for investment by *new* steel companies. The old steel companies that once had plants in the Buffalo area have disappeared.

in railroads made the locomotive works in upstate New York obsolete. There was simply little indigenous demand for steel in the area and no particular reason to locate new capacity there to serve other regions.

One cannot underestimate the role that labor-management relations have played in the regional shift of steel and the demise of the integrated companies. As long as the U.S. steel industry was a set of tight regional oligopolies, the steelworkers union was able to appropriate a large share of the rents from these oligopolies through extraordinarily high wage and benefit packages and unbending work rules. By the late 1960s or early 1970s, however, this cozy relationship began to fray as competition broke out in three forms: a surge of imports, entry by the integrated companies (particularly Bethlehem and US Steel) into one another's geographical domains, and the minimills. By 1980, the integrated companies had begun their long-term decline to oblivion; US Steel finally broke from the industry-wide bargaining agreement and failed to agree to a new contract in 1986, thereby suffering its first company-wide strike since 1959. By this time, it was too late. The labor-management climate and the extremely high labor costs doomed the integrated firms to unending decline.[17]

The rapid rise of the minimills was largely forged by a few nonunion companies, such as Nucor, who compensated their workers highly in return for productive effort. These companies built plants throughout the South, the Midwest (outside heavily-unionized metropolitan areas), and the Southwest. Very few minimill plants were built in the East, and only two – Raritan River, a wire rod facility in New Jersey, and Auburn Steel, a bar producer in Auburn, NY, were successful. The Middle Atlantic States, the very birthplace of the steel industry, were not generally attractive locations for the new minimills because steel-using industries were moving westward and southward, and the Middle Atlantic states were heavily unionized. Nothing could have encouraged Nucor to build a plant in the Buffalo area, nor any other location in New York, although it has recently acquired the Auburn Steel plant located west of Syracuse.

B. Motor Vehicles

Like the steel industry, the U.S. motor vehicle industry had settled into a cozy oligopoly by the late 1960s. Thoroughly unionized and seemingly immune from import competition, the industry's efficiency and quality deteriorated. The surge in gasoline prices in 1973-4 led to a surge in imports, particularly from Japan. By 1979, Chrysler was forced to seek a bail-out from the U.S. Treasury, and by the early 1980s, all of the Big Three companies were pursuing trade restraints against the Japanese. They succeeded in obtaining import quotas on Japanese cars in 1984, thereby inviting the Japanese to produce their higher-quality cars in the United States if they wished to continue to continue to increase their market shares.

The Rise of the "Transplants." The first Japanese plant was built by Toyota in co-operation with GM on an old GM assembly site in northern California. This choice reflected Toyota's timidity in making investments in a new climate of industrial relations. When the California plant succeeded, Toyota was emboldened to strike out on its own in the United States. Its choice for a plant location was Georgetown, KY, between Lexington and Frankfort, but far

[17] For a discussion of the "end game" in steel, see Colin Lawrence and Robert Z. Lawrence, "Manufacturing Wage Dispersion: An End-Game Interpretation," *Brookings Papers in Economic Activity*, 1985, pp. 47-106 .

from the major centers of unionized automobile production. Honda chose a rural location in central Ohio, Marysville, and Nissan built a plant in Smyrna, TN, a rural location near Nashville. Isuzu and Subaru built a plant in rural north-central Indiana. All of these plants were opened as nonunion operations and remain so today. The only two plants built by Japanese companies that have been organized by the United Autoworkers were the Mitsubishi-Chrysler joint venture in Normal, IL, now wholly-owned by Mitsubishi, and the Mazda plant built on a former Ford plant site in the Detroit area. Mazda is now controlled by Ford and could not have hoped to keep its plant non-union if it built it in the shadow of Ford's Dearborn (MI) headquarters.

Subsequently, BMW and Daimler-Benz built new assembly plants in South Carolina and Alabama, and Honda has built a plant in Alabama to assemble minivans. Finally, in April 2002, Hyundai announced plans to build a new plant near Montgomery, AL.

The shift in the location of motor vehicle assembly in the U.S. has been less marked than the shift in the location of steel plants. The newcomers – the transplants – have not displaced Big Three operations to the degree that minimills have displaced Big Steel because the U.S. companies have been able to adapt their facilities to the changes introduced by the Japanese companies. In vehicle production, a large share of the capital stock has a rather short useful economic life. Periodic model changes require "retooling" of parts operations and vehicle assembly lines. Older assembly, stamping, and parts lines must thus be periodically be retrofitted with new technology even if a completely new plant is not built. By contrast, the old integrated steel works could not be converted to "minimill" status – indeed, none has been.

This wave of foreign investment in U.S. motor vehicle production facilities has moved the center of gravity of the motor vehicle southward from Detroit. (Compare Figures 3 and 4.) Notably, no plants have been built by the Japanese or Korean companies independently in any large metropolitan area in the Midwest. None has been built in the Middle Atlantic region. All have been built with easy access to Interstate Highways 55, 65, or 75, allowing a vast network of parts and steel suppliers to provide "just-in-time" delivery of the materials needed for vehicle assembly. The states that have benefited most from these new facilities are Kentucky, Tennessee, and Alabama, states that have rates of union membership between 8 and 11.5 percent.[18]

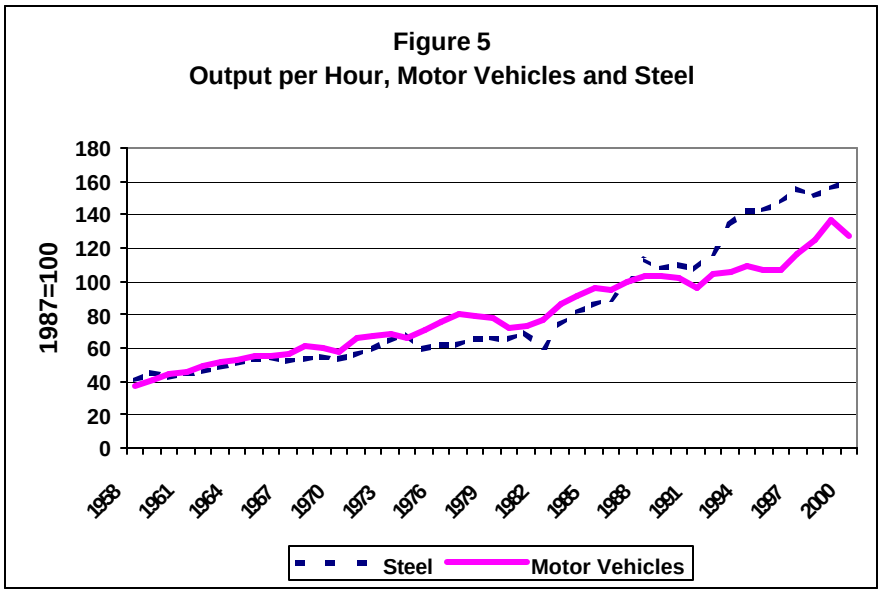
The effect of Japanese entry on the motor vehicle industry has been to improve product quality dramatically. Japanese cars enjoyed a wide lead over U.S. nameplates when the Japanese first came to the United States to produce vehicles. The U.S. companies were forced to redesign their models and change production practices to improve product quality. This process probably closed the quality gap between U.S. and Japanese models, although the share of Japanese nameplates continues to grow and Japanese cars remain at the top of the quality rankings compiled by market research companies.

Unlike the steel industry, the new entrants are not so much more efficient that they are now threatening to replace the incumbents altogether. As Figure 5 shows, productivity growth did not accelerate perceptibly in the motor vehicle sector in the early 1980s. Between 1958 and 1981, average growth in output per hour was 2.9 percent per year; between 1981 and 2000, the

[18] Barry T. Hirsch, David A. Macpherson, and Wayne G. Vroman, "Estimates of Union Density by State," *Monthly Labor Review*, Vol. 124, No. 7, July 2001.

growth rate remained at 2.9 percent per year. In steel, on the other hand, output per hour was only 2.3 percent per year, 1958-1981, but it soared to 4.4 percent per year in 1981-2000 due to the replacement of inefficient integrated plants by minimills.

Figure 5
Output per Hour, Motor Vehicles and Steel



Source: Bureau of Labor Statistics.

Buffalo's Participation in the Motor Vehicles Sector Motor vehicle parts manufacture still accounts for 25 percent of Buffalo's manufacturing work force. These workers earn a huge premium over other workers in Buffalo. In 1997, the average non-motor vehicle manufacturing worker earned $29,700; the average motor vehicle parts worker earned $55,989. By comparison, the average U.S. annual earnings for workers in motor vehicle parts were only $36,774 in 1997. This large wage premium would seem to appear to make it an unattractive location for further investment in motor vehicle parts. But there are important reasons for the continuation of existing vehicle parts manufacture in the Buffalo area.

TABLE 6

Average 1997 Wages of Production Workers
Motor Vehicle Parts Manufacturing, Selected States

State, MSA	Average Annual Wages
Buffalo	$55,989
Ohio	$43,256
Indiana	$40,519
Kentucky	$26,283
Tennessee	$26,724
Alabama	$45,751

Source: Bureau of the Census, *Census of Manufactures, 1997.*

Buffalo's surprisingly large automotive components sector is likely the product of two forces: the legacy of automobile company operations in the area dating from the early 20th century and the signing of the U.S.-Canada Auto Pact in 1965. The latter agreement, now under attack in the World Trade Organization, requires U.S. automobile producers to assemble a substantial share of their Canadian vehicle sales in Canada.[19] Given the size of the Ontario market in Canada and its proximity to parts suppliers in the U.S., most of this assembly takes place in southern Ontario close to one of two ports of entry: Detroit and Buffalo-Niagara Falls. For this reason, the legacy operations of U.S. automotive companies in Buffalo continue to enjoy a comparative advantage in supplying vehicle assembly plants. In 1997 alone, the U.S. exported $2.5 billion of motor-vehicle parts through the port of Buffalo to Canada.[20] A large share of this total was undoubtedly produced in the Buffalo area, given its comparative advantage in producing for Canadian assemblers. This comparative advantage is reflected in General Motors' recent decision to spend $500 million in upgrading its Tonawanda engine plant.[21]

Some have been concerned that the establishment of the North American Free Trade Agreement (NAFTA) may have had a negative impact on manufacturing centers in the United States. A recent article by Will and McPherson examines the impact of NAFTA on manufacturing in western New York, but finds that NAFTA has had little effect.[22] This is not surprising, given the importance of motor-vehicle parts in the Buffalo area and the grandfathering of the U.S.-Canada Auto Agreement in NAFTA. With about 17 percent of all North American light-vehicle assembly capacity located in Canada, in part because of this agreement, Canada continues to be an important source of demand for Buffalo-produced vehicle parts.[23]

C. Computers and Electronics

The electrical machinery and machinery sectors have obviously been affected by another form of technical change, the replacement of electromechanical machines by electronics. As Table 5 shows, the number of workers in these electronics-related industries has more than doubled since 1954 while total manufacturing jobs have essentially remained constant. This growth has not been helpful to manufacturing job formation in Buffalo, New York, or the Middle Atlantic states in general. Table 7 shows the states with the largest concentrations of workers in

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[19] The 1965 Auto Pact requires U.S. companies to maintain the 1964 Canadian nominal value added in assembly and to increase it at 50 to 60 percent of the rate of growth in the value of their Canadian car and truck sales. See http://strategis.ic.gc.ca/SSG/am00540e.html (Visited on May 7, 2002.)

[20] U.S. Bureau of the Census, Export Statistics (supplied to the author in electronic form).

[21] "New York's Centers of Excellence," *Site Selection*, March 2002. www.siteselection.com/features/2002/mar/northeast/pg03.htm. (Visited on May 14, 2002).

[22] Renee Will and Alan McPherson, "The Impact of the North American Free Trade Agreement on the Economy of Western New York," *Economic Development Quarterly*, Vol. 15, No. 4, November 2001, pp. 340-49.

[23] "2000 North America car and truck assembly plant capacity and utilization," *Automotive News Data Center*. www.autonewsdatacenter.com. { Data on parts exports through Buffalo-Niagara Falls to come from U.S. Bureau of the Census.]

these industries. California and Texas account for one-fourth of these production workers. New York has roughly 5 percent of them, and the Middle Atlantic states account for roughly 11 percent *in toto.* However, the production facilities in the Middle Atlantic region are clearly different from those in the West and Southwest. The value-added per worker is barely $200,000 in the Middle Atlantic region, and even less in New York, while the facilities in the West and Southwest generate more than double that amount. The Rust Belt states of the Middle Atlantic and Great Lakes region account for only slightly more employment in these industries than California, but they generate far less value added. The more "high tech" manufacturing activities are obviously located in the West and Southwest, not the old industrial regions.

TABLE 7
Computer and Electronics Manufacturing, 1997

	Production Workers	**Value Added** (millions $)	**Value Added Per Worker** ($)
United States	887,002	252,630	284,813
California	184,852	65,114	352,249
Texas	65,281	27,380	426,311
Arizona	23,489	13,483	574,013
Oregon	23,381	10,897	466,062
New York	43,540	8,348	191,732
Middle Atlantic Region	101,647	20,759	204,226
Great Lakes Region	113,933	19,297	169,378

Source: U.S. Bureau of the Census, *Census of Manufactures*.

The Buffalo area had only 2,015 production workers in the computer and electronics industry in 1997, or just over 3 percent of it manufacturing workforce. The workers in this industry had substantially lower wage rates than the average manufacturing worker in Buffalo, $15.38 per hour versus $17.48 per hour, respectively.[24] These low wages and low levels of value added per worker suggest that computer and electronics manufacturing in Buffalo are not attracting highly-skilled workers. Given their relatively small number, it is clear that Buffalo is not currently a center of electronics-related manufacturing.

VI. Other Industries

Given that Buffalo's manufacturing has always been heavily concentrated in metals-related industries, there is little to be deduced from looking at most other manufacturing industries. In 1954 and 1972, five other industries, listed in Table 8, accounted for two-thirds of Buffalo's non-metals- related manufacturing employment.

[24] Census of Manufactures, 1997.

TABLE 8
Production Workers in Other Important Buffalo-Area Manufacturing Industries
1954-97

Industry	1954	1972	1997
Food processing	11,796	7,600	4,824
Chemicals	11,663	7,000	2,920
Stone, Clay & Glass	6,005	4,200	2,736
Pulp and Paper	5,751	4,000	1,714
Printing	5,231	4,800	3,155

Source: U.S. Bureau of the Census, *Census of Manufactures*.

These five industries accounted for 40,450 production workers in 1954; in 1997, they employed only 15,250 workers.

The greatest decline in these once-important Buffalo manufacturing industries has been in chemicals, where production-worker employment has fallen by 75 percent since 1954. There is no obvious reason for this extraordinary decline. U.S. chemical industry employment has not declined since 1954, and total chemical production workers in New York has only declined by 23 percent. The real price of an important input, electricity, for industrial users has risen somewhat less in New York than in the country as a whole since 1970.[25] New York remains among the largest four states in chemicals production,[26] but Buffalo has clearly not kept pace.

The production workers in the first four industries shown in Table 8 plus the workers in metals-related industries accounted for nearly 85 percent of all manufacturing workers in the Buffalo area in 1954 and 1972. In each of these industries, transportation costs are likely to be important. With the geographical center of the United States shifting from southern Ohio to southern Missouri in the last half of the 20th century, Buffalo became increasingly distant from the country's consumption centers. This locational disadvantage surely accounts for a substantial share of Buffalo's decline as a manufacturing center.

VII. The Role of Wages, Unions, and Geography

As we have seen, Buffalo was once a steel center, producing raw steel and a variety of metal products. To this day, its most important remaining manufacturing industry is motor vehicle parts. Steel and motor vehicles are both highly-unionized, high-wage industries. Indeed,

[25] Energy Information Administration, U.S. Department of Energy, *State Energy Price and Expenditure Report, 1999.* Industrial electricity prices were deflated by the chain-type GDP deflator, available from the Bureau of Economic Analysis, U.S. Department of Commerce.
[26] The others are Texas, New Jersey, and North Carolina. Source*: 1997 Census of Manufactures.*

Buffalo's average wage rate remains far above the national average: $17.48 per hour versus $13.99 per hour.[27] Surprisingly, the Middle Atlantic states do not have manufacturing wage rates that are appreciably above the U.S. average, and New York state's average is actually marginally lower than the national average. (See Table 9.) However, Buffalo's average wage rate remains very high, even above the average for the highly-industrialized Great Lakes states. The East South Central region, towards which motor vehicles are migrating, has far lower wage rates and a much lower share of workers in unions.

TABLE 9

Average Manufacturing Wage and Share of Non-Farm Workers in Unions, 1997

	Average Manufacturing Wage ($ per hour)	**Union Members as a Percent of Workforce***
United States Average	13.99	14.2
Buffalo	17.48	N.A.
New York State	13.90	26.5
Middle Atlantic States	14.21	21.8
Great Lakes States	15.71	19.3
East South Central States	12.61	9.3

Sources: U.S. Bureau of the Census, *Census of Manufactures* ; Hirsch, McPherson, and Vroman (2001). ***** Non-farm workers; N.A.- Not available

The relative importance of unions in the United States has declined dramatically in recent years. In 1972, 26.6 percent of nonfarm workers were union members; by 1997, the share had fallen to 14.2 percent. Significantly, the share of nonfarm workers in unions has declined by nearly 50 percent in the Great Lakes states over this period, but only by 20 percent in New York. In 1972, the union share in New York was 33.1 percent, substantially below Michigan's 40.4 percent. In 1997, New York had declined to just 26.5 percent union members, but Michigan had plummeted to 23.4 percent. The other Great Lakes states fell to between 14 and 19 percent. Thus, New York has "resisted" the growth in nonunion jobs far better than the industrial heartland.

In earlier research, I found that unionization and, to a lesser extent, manufacturing wages were important in explaining the different rates of growth of manufacturing across states for the period 1967-89.[28] Specifically, I found that unionization, and wages were inversely related to manufacturing employment growth, but that the distance of a state from the nation's industrial heartland and industrial energy prices were directly related to manufacturing employment growth over this period. In addition, I found that states in the Mountain Region outperformed and states and that states along the cold U.S.-Canada border from North Dakota to Montana under-performed, *ceteris paribus*. While these results were not specific to New York, I have updated them for the decade of the 1990's to see if the conclusions are still valid. Surprisingly, the 1989-1999 period is generally consistent with my earlier results. (See Table 10.)

[27] Id.
[28] Robert W. Crandall, *Manufacturing on the Move*, Brookings 1993.

As in my earlier work, I estimated a regression equation of the form:

$$(1)\ \text{Log}\,(Emp_{it} / Emp_{i,t-1}) = a_0 + a_1\,Union_{i,t-1} + a_2\,Wage_{i,t-1} + a_3\,EnergyPrice_{i,t-1} + a_4\,Tax_{i,t-1} + \sum a_i\,D_{ij} + u_i$$

where Emp is manufacturing employment, Union is the share of manufacturing workers in unions,[29] Wage is the average manufacturing wage in dollars per hour,[30] EnergyPrice is the average price of energy to industrial users in cents/btu,[31] Tax is the share of state corporate taxes in manufacturing output, the D's are various dummy variables for location, u is a random error term, the subscript "it" denotes the 1999 value for the ith state, and "i,t-1" denotes the 1989 value for the ith state.

The results of estimating (1) for the 1989-99 period once again confirm the importance of unionization in manufacturing employment growth, but a state's average wage rate seems to have become much less important. (See Table 10) In the 1989-99 period, a state's propensity to tax corporations retarded manufacturing employment growth, but most of the regional dummy variables were statistically insignificant. The one regional dummy that remains significant is the one for the frozen states of North Dakota, Wyoming, Idaho, and Montana (NorthTier), but it has changed signs since the 1967-89 period. Perhaps these states are basking in the glow of global warming now.

The Zone variable is an index of distance from the old Northeastern industrial area employed by Leonard Wheat.[32] It assumes a value of 1 for the Middle Atlantic and New England regions and increases monotonically to 11 as one moves west and south from these regions. The positive and significant coefficient of Zone suggests that even after accounting for the relevant microeconomic variables, Buffalo's geographical location is a severe disadvantage, all other things equal. The significant effect of Zone pervades the earlier regression estimates as well; the country has been moving away from the Northeast for decades. In 1993, I could not explain the positive coefficient on EnergyPrice in 1993; I still cannot, but I can note that the sign of this variable changes to negative if one uses 1988 energy prices instead of 1989 prices!

VIII. Anecdotal Evidence on Location Decisions

I am not aware of any current database on investment in new manufacturing plants across states or metropolitan areas that would allow me to investigate econometrically the determinants of site selection in recent years. However, there are a few sources that attempt to tabulate major investments across industries by location. One of these is *Site Selection* magazine. Its reports on the distribution of large recent investment projects provide support for several of the conclusions reached above.

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[29] The union share for manufacturing in each state is obtained from Grant Thornton, *11h Annual Manufacturing Climates Study*, 1990.
[30] Source: Bureau of Labor Statistics.
[31] Obtained from the Department of Energy's Energy Information Administration's website: www.eia.doe.gov. Accessed on May 9, 2002.
[32] Leonard F. Wheat, *Regional Growth and Industrial Location*, Lexington Books, 1973.

TABLE 10

Regression Estimates of the Determinants of the Growth in Manufacturing Employment
50 States, 1989-1999
(t-statistics in parentheses)

Variable	(1)	(2)	(3)	(4)
Constant	-0.41 (-1.35)	-0.70 (-2.86)	-0.583 (-3.58)	-0.575 (-3.68)
Union	-0.83 (-2.96)	-0.46 (-1.97)	-0.358 (-2.09)	-0.340 (-2.06)
Wage	0.259 (0.92)	0.0144 (0.65)		
EnergyPrice	0.066 (1.72)	0.097 (3.98)	0.0988 (3.27)	0.0977 (3.37)
Tax	-0.612 (-1.28)	-1.42 (-3.51)	-1.42 (-3.53)	-1.39 (-3.59)
Zone		0.0410 (5.34)	0.0414 (5.46)	0.0379 (5.07)
NorthTier				0.150 (2.18)
No. of observations	50	50	50	50
R^2	0.188	0.496	0.502	0.541

First, six of the largest 20 announcements of U.S. investment projects for 2001 were in the motor vehicles industry.[33] Four of these ventures are located in Michigan, one is in Alabama, and one in the Buffalo area – an expansion of GM's Tonawanda engine plant. However, the Tonawanda project was the only one of the 20 largest projects that involved manufacturing in the Northeast.

Second, the transportation equipment industry provided the most new or expanded major facilities – *i.e.*, those involving $1 million or more in investment. Transportation equipment accounted for 712 such announcements in 2001, followed by fabricated metals with 419, chemicals with 370, and machinery with 368.[34] These data confirm the continuing importance of metals-related industries in general, and motor vehicles in particular. The ten largest transportation equipment projects involved motor vehicles or motor vehicle parts.

[33] "20 Giants: 2001's Biggest U.S. Corporate Facilities," *Site Selection Online.* www.siteselection.com/issues/2002/mar/p138/side_02.htmAccessed on May 14, 2002.
[34] Ron Starner, " The Auto Industry Leads All Sectors," *Site Selection Online.*. www.siteselection.com/issues/2002/mar/p165/index.htm Visited May 14, 2002.

Third, only fifteen of the largest 25 projects announced in 2001 for the Middle Atlantic states involved manufacturing.[35] Of these, only three could be classified as in one of the metals-related industries. Even so, one of these three "projects" was not a new facility at all, but rather was Nucor's purchase of a successful, operating minimill, Auburn Steel. Other than the GM Tonawanda engine plant, the only other major new metals-related manufacturing project announced for the Middle Atlantic region was a Harley-Davidson plant in York, PA.

Fourth, of 15,462 announcements of major new manufacturing plants or plant expansions in the U.S. in 1999-2001, only 1,738 were located in the Middle Atlantic region, or about 11 percent.[36] This is slightly below the Middle Atlantic region's 1997 share of manufacturing employment and value added, presaging little or no turnaround in the long-term slide of the region's share of U.S. manufacturing. The South Atlantic region accounted for substantially more – 2,890. The much smaller East South Central region, with less than half the population of the Middle Atlantic region, accounted for almost as many projects – 1,627.

Other than General Motors' large investment in its Tonawanda plant, the only other large Buffalo-area investment identified by *Site Selection* is Adelphia Communications' new customer service and technical support center. This is neither manufacturing nor a secure project, given Adelphia's recent collapse in the wake of various accounting irregularities.[37]

Finally, the American Electronics Association and NASDAQ have compiled a list of the top 60 "Cybercities" in the United States. The only city in upstate New York to make the list is Rochester, reflecting its long heritage of participation in high-technology research and manufacturing.[38] Most of the high-technology activity in these 60 cities is probably not concentrated in manufacturing *per se*, but these cities are magnets for many high-technology companies, such as electronics or pharmaceutical companies, that engage in manufacturing.

In short, there is nothing in the anecdotal evidence concerning manufacturing investment in the Buffalo area that would suggest a turnaround in the area's long-term decline in manufacturing. Engines, stampings, and other motor vehicle parts remain the core of the Buffalo area's manufacturing, presumably because of the area's proximity to Canadian motor vehicle assembly plants.

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[35] "New York's Centers of Excellence," *Site Selection Online*. www.siteselection.com/features/2002/mar/northeast/pg03.htm. Visited May 14, 2002.

[36] "New Corporate Facilities and Expansions," *Site Selection Online*. www.siteselection.com/issues/2002/mar/p138/side_01.htm. Accessed May 14, 2002.

[37] See Fred O. Williams, "Cable TV Companies Tending to Outsource Customer Service," *Buffalo News*, May 9,2002. www.buffalonews.com Accessed on May 15, 2002. Adelphia has lost more than 80 percent of its market cap in the past year.

[38] Nevertheless, high-tech manufacturing is in steep decline in Rochester. See "Economic Restructuring in Western New York State," *The Regional Economy of Uptsate New York*, Federal Reserve Bank of New York, Buufalo Branch, Fall 2001, p. 5.

IX. Policy Conclusions

It would be very difficult to offer any optimistic assessment of the prospects for manufacturing in Buffalo. The long, steady decline of the area's manufacturing sector is the product of four forces: the relative decline in U.S. manufacturing, the steady shift of population and industry westward and southward, the loss of Buffalo's transportation advantages, and the legacy of collective bargaining in metals-related industries. Nevertheless, a substantial amount of motor vehicle components manufacture remains in Buffalo, in part because of the area's proximity to Canadian assembly plants and the heritage of early U.S. vehicle company location decisions.

For the immediate future, it would appear that Buffalo's fate as a manufacturing center depends on its ability to continue to attract investment in motor vehicle parts production. Since no new U.S. vehicle assembly plants are being built in the Northeast, this suggests that Buffalo is likely to rely on supplying Canadian assembly plants with motor vehicle parts. In 1997, for example, U.S. companies exported approximately $2.5 billion in motor vehicle parts through the port of Buffalo. It is important to the Buffalo area that a substantial share of such parts be fabricated locally. As long as the U.S.-Canada Auto Pact remains in force, Buffalo may continue to attract U.S. Big Three investment in parts production. If, however, the Auto Pact is dissolved, perhaps because of a WTO challenge, Buffalo's position in parts manufacture could be threatened.

For the longer run, Buffalo must move away from its heavy-industry tradition. The northeast corner of the United States is no longer an attractive location for metals, chemicals, or building materials production. Even after its legacy of collective bargaining is no longer a handicap, steel, machinery, and transportation equipment companies are not likely to return to the Buffalo area. Arkansas, Tennessee, and Alabama are much closer to the population center of gravity in the United States and are located on important Interstate highway routes. For Buffalo to revive as a center of manufacturing, it will have to emulate some of the Western states and attract the new high-technology industries. To do so, Buffalo would have to establish itself as a rival to Northern California, Austin (TX), Boston (MA), or even Rochester (NY). This, in turn, would undoubtedly require a substantial effort to concentrate on the development of human capital. The requirements for such an effort are beyond the scope of this paper.

Finally Buffalo cannot hope to compete with Kentucky, Alabama, South Carolina, and other states in attracting the large new motor vehicle or steel plants that are being lured to these states through massive state-local government incentives. Nevertheless, the State of New York and Buffalo might examine their taxation and energy policies to see if minor changes could increase the incentive for other manufacturers to invest in the area.