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The Upstate Economy under the New NAICS Classification System

As the United States has shifted from a manufacturing- to a service-based economy, the Standard Industrial Classification (SIC) system, developed in the 1930s to classify data, has become increasingly timeworn. The SIC system was designed when the economy was largely manufacturing based. Although it was expanded incrementally every ten or fifteen years to include new industries, as services have become the dominant economic sector, the need for a new system was evident by the 1990s.

Accordingly, a replacement that is better suited to the economy of the twenty-first century--the North American Industry Classification System (NAICS)–is now being implemented by U.S. statistical agencies. In addition to its better accounting of the services industry, NAICS differs from its predecessor in the way it classifies data. The SIC system grouped industries based on *what* they produced, while NAICS classifies data according to *how* products are made.

In this issue of *The Regional Economy of Upstate New York*, we examine the composition of the upstate New York economy as reflected by the new NAICS classifications, and explain how this new perspective changes our understanding of the economy. We find that under the new system, the largest and most concentrated industry sectors in upstate New York are manufacturing and health care, with education also a significant, but smaller, industry specialty. Our analysis also reveals that in a number of newly created service-oriented industry categories, upstate New York has considerably less employment than the rest of the nation. Moreover, our examination of industry growth rates finds that economic performance upstate was below that of the nation from 1990 to 2002, yet at times areas upstate did surpass the United States in certain industries.

In addition, given the importance of manufacturing to upstate New York, we examine in detail the manufacturing sector under the new NAICS classification. We find that a substantial number of jobs were reclassified from manufacturing to service industries under NAICS, as the new system isolates the production component of the industry. This results in more pronounced declines in manufacturing employment over the past decade for most of upstate as well as the nation.

The Purpose of NAICS

The primary goal of NAICS is to reflect more accurately the contemporary economy. The SIC system was created in the 1930s mainly to organize statistical data collected by government agencies and provide a convenient standard for categorizing and analyzing economic data. Manufacturing dominated the economy then, so the SIC system grouped data by product-based classifications. Periodically, the system was updated to include new industries such as computers and cellular telephones. Yet it became increasingly outdated nonetheless, as service industries took on greater importance and the number of new industries grew too rapidly for the SIC system to incorporate updates.

In response, in 1992, the U.S. government's Office of Management and Budget (OMB) established a committee of representatives from government data collection agencies to revisit the process of classifying data. The committee also coordinated its efforts with statistical agencies from Canada and Mexico to create a system common to all of North America, partially in response to the increased economic interaction associated with the North American Free Trade Agreement. A new system was designed, and in 1997, OMB announced its decision to adopt NAICS.[1]

Although NAICS has much in common with the SIC system, it has fundamentally different organizing principles. Instead of categorizing data according to products, as the SIC system does, NAICS categorizes data based on the similarity of the production processes used. The NAICS category accommodation and food services, for example, includes hotels from the SIC services industry and restaurants from the SIC retail trade industry classifications, as both use a similar process to provide these services, even though the services themselves are quite different. In addition, NAICS separates activities within an organization that are performed at different establishments. For example, the headquarters of manufacturing companies, although not directly involved in the production process, were classified by SIC as manufacturing. Under NAICS, corporate headquarters are classified under a new category, management of companies.

This new orientation toward processes, coupled with the opportunity to overhaul the entire classification scheme, allowed the development of a system more focused on the services sector and new and emerging industries. The broadest of the SIC categories contain ten divisions, five of which are related to services. In contrast, the broadest of the NAICS categories contain twenty industry sectors, sixteen of which involve services.

Table 1

NAICS Industry Employment Shares (percent)

NAICS Sector	U.S.	Upstate	Buffalo	Rochester	Syracuse	Albany	Utica	Binghamton
Manufacturing	13.9	**16.4**	**16.1**	**19.3**	14.7	9.0	**18.1**	**24.0**
Health Care and Social Assistance	12.6	**15.9**	**15.5**	14.4	14.1	**16.7**	**19.4**	14.3
Retail Trade	12.9	14.6	13.3	13.2	14.0	**14.9**	**14.8**	14.4
Accomodation and Food Services	8.7	8.2	8.4	6.9	8.1	7.4	7.3	8.2
Admn. Support, Waste Mgt., Rmdtn. Svs.	7.9	5.8	7.6	6.6	6.9	5.5	4.9	5.7
Finance and Insurance	5.4	4.7	5.5	3.4	4.7	**7.2**	**8.6**	4.0
Professional, Scientific, and Tech. Svs.	6.2	4.7	4.7	5.1	5.0	7.2	3.0	4.1
Wholesale Trade	5.3	4.6	5.9	4.5	5.5	4.5	3.1	4.8
Education	2.3	**4.6**	2.4	**5.3**	**4.5**	**5.4**	**3.1**	**2.6**
Other Services	4.7	4.5	5.1	3.6	4.9	5.2	5.0	3.9
Construction	5.6	4.1	3.9	4.0	4.0	4.6	2.9	3.7
Information	3.3	2.8	2.0	3.3	2.9	3.6	3.0	3.4
Transportation and Warehousing	3.3	2.6	3.4	1.7	**4.2**	2.1	2.0	1.7
Mgmt. of Companies and Enterprises	2.5	1.8	1.5	**3.4**	1.6	1.8	0.6	0.7
Arts, Entertainment, and Recreation	1.5	1.4	1.3	1.4	1.1	1.2	0.8	1.0
Real Estate and Rental and Leasing	1.8	1.3	1.4	1.6	1.4	1.3	0.8	1.0
Utilities	0.6	**0.7**	0.6	0.6	**1.8**	0.4	0.4	**1.9**

Source: U.S. Bureau of the Census, *County Business Patterns* (2001).

Notes: NAICS isthe North American Industry Classification System. Shares of employment are expressed as a percentage of total private sector nonfarm employment. Upstate New York refers to a total of 52 counties in New York State; it does not include downstate New York (New York City and Westchester, Putnam, Rockland, Nassau, and Suffolk counties). The figures in bold represent employment shares that are approximately 20 percent higher than the corresponding U.S. shares.

Employment Patterns for Upstate New York under NAICS

We examine industry employment patterns in the upstate New York economy under NAICS using the U.S. Census Bureau's *County Business Patterns*. This source provides detailed data on most of the twenty broad NAICS categories–with the exception of the government and agriculture sectors, for which data are not collected.[2] Table 1 ranks NAICS industries by their share of upstate New York private sector employment.

The table shows that the three largest sectors employ nearly half of all private sector workers upstate, and that these sectors have higher shares of employment than their national counterparts. Manufacturing is the largest industry in the private sector economy, both for upstate New York and the nation, employing more than 16 percent of upstate workers. Rochester and Binghamton have particularly large shares, while Albany's share is significantly below those of the other upstate areas.

Health care and social assistance is the second largest sector, employing nearly 16 percent of upstate New York workers, significantly more than the nation's share of 12.6 percent. This new sector includes medical care, various forms of health care, and social assistance such as elder care. The large share of employment in these sectors accentuates the size and importance of the health care industry to the upstate economy, particularly in Utica, where the health care employment share approaches 20 percent. Retail is the third largest sector in the upstate economy, employing more than 14 percent.

It is also worth noting that the education sector employs 4.6 percent of upstate workers. At double the national share of 2.3 percent, education's share of upstate employment signals an important specialty of the regional economy. This classification includes private colleges and universities, schools, and training institutions.

New Perspectives on Services

Several new NAICS industry categories were designed to group service-oriented activities scattered across many SIC categories. These sectors tend to be smaller in upstate New York than they are nationally, with their employment shares generally about three-quarters the size of the corresponding U.S. shares.

The largest of these new sectors is administrative support, waste management, and remediation services, employing slightly less than 6 percent of the workforce upstate, fully two percentage points less than the national share. Firms in this sector support the operations of other establishments, and include temporary help, call centers, clerical services, and business support services.

Two newly created sectors–accommodation and food services, and arts, entertainment, and recreation–provide insight into the leisure and hospitality industry. Taken together, they employ about 10 percent of private sector workers upstate, about the same percentage as the nation's. These new categories were previously included for the most part in the SIC retail industry, and include hotels, restaurants, spectator sports, performing arts, and museums.

The professional, scientific and technical services sector employs slightly less than 5 percent upstate, and includes such business services as legal, accounting, and advertising, as well as research and development. Albany stands out here with a share of more than 7 percent–possessing a significantly higher percentage of workers in this sector than the rest of upstate New York does.

The information sector employs 2.8 percent of workers upstate, compared with 3.3 percent nationwide. Buffalo's share of only 2 percent is significantly lower than that of the rest of upstate. This industry includes establishments that process and distribute information, including publishing, as well as data processing, satellite and telecommunications, and Internet service providers.

The management of companies and enterprises sector employs slightly less than 2 percent of upstate workers, a smaller share than the national percentage. This new NAICS category includes establishments that oversee other parts of the same organization, such as corporate headquarters of large companies. Rochester has an employment share in excess of 3 percent in this sector, while Binghamton and Utica each have shares of less than 1 percent.

The remaining sectors each employ less than 5 percent of upstate New York private sector workers. These sectors generally employ smaller shares of workers upstate than the national average–the exceptions being finance and insurance in Albany and Utica, transportation and warehousing in Syracuse, and utilities in Syracuse and Binghamton.

Although government data are not available from this source, data from the Bureau of Labor Statistics indicate that public administration is a large and important sector in upstate New York. It employs about 20 percent of workers there, compared with the corresponding U.S. share of 17 percent.

Table 2

Percentage Employment Growth for Upstate Metro Areas by Supersector*: 1990-2002

Supersector	U.S.	Buffalo	Rochester	Syracuse	Albany	Utica	Binghamton
Professional and Business Services	47.6	28.4	32.9	9.3	25.9	73.3	31.0
Education & Health Services	47.3	11.9	33.6	33.9	40.4	45.4	17.8
Leisure and Hospitality	28.9	-0.8	10.4	5.5	10.8	33.9	-2.2
Construction	27.9	-8.9	-3.5	-19.7	-6.1	-14.5	-11.6
Information	27.2	-0.5	38.8	-7.6	9.0	46.0	40.2
Other Services	25.5	21.7	16.0	29.6	28.9	29.7	41.0
Finance, Insurance, Real Estate	18.6	8.5	-10.4	-15.5	5.1	5.8	3.1
Public Administration	16.7	3.5	16.5	7.4	-1.4	-11.1	14.4
Retail Trade	14.1	-11.5	1.2	-4.2	3.5	-11.4	4.7
Transportation, Warehousing, Utilities	14.0	-3.5	-10.4	-7.6	13.3	31.5	30.4
Wholesale Trade	7.1	-3.1	10.5	-21.7	1.3	-16.6	10.3
Manufacturing	-13.5	-22.8	-29.7	-15.7	-29.9	-31.4	-44.2
Total	19.1	-0.2	3.9	1.0	7.4	3.5	-3.2

Source: U.S. Department of Labor

* The supersector categories are defined by the U.S. Department of Labor; they differ from the secotrs in Table 1 because some North American Industry Classification System divisions are combined into broader groupings.

Industry Growth Patterns

We also examined industry growth patterns using newly released data from the Bureau of Labor Statistics, which uses slightly broader NAICS industry groupings than do other data sources. This source is unique in its provision of NAICS-based employment data dating back to 1990.[3] Our examination of these data reveals that economic performance upstate was well below the nation's performance from 1990 to 2002 (Table 2). At times, however, some areas outperformed the nation in certain industries.

The most rapidly growing sectors for the nation were generally the fastest growing ones upstate as well. Professional and business services–which combines professional, scientific, and technical services with administrative support and management–was the fastest growing sector in the U.S. economy, followed closely by education and health services. These were generally among the fastest growing sectors in upstate metro areas as well, although growth was often significantly less than the national rate. The information sector, while small, was among the fastest growing industries in Rochester, Utica, and Binghamton, outpacing U.S. growth during the period, although this sector shrank in Buffalo and Syracuse. The sector classified as other services, which includes repair and personal care services as well as religious activities, was also a top performer upstate, with growth in most metro areas outpacing the country.

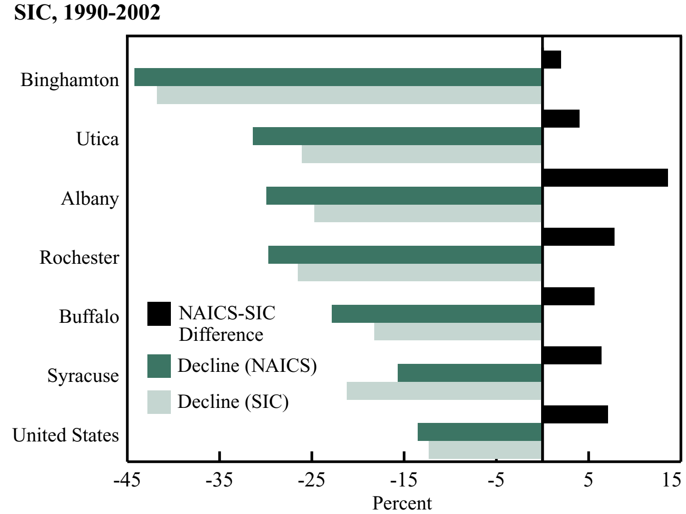
Many metro areas experienced declines in certain sectors, but especially noteworthy were the across-the-board decreases in construction and manufacturing. Declines in manufacturing were far more significant upstate than they were nationwide.

A Closer Look at Manufacturing

Because of manufacturing's importance to the upstate economy and the significant changes made under NAICS, we examine the new NAICS manufacturing classification in greater detail. While the SIC system counted all components of a manufacturing company as manufacturing, NAICS narrows this classification to isolate the production component. Manufacturing companies often have individual establishments performing service-oriented administrative tasks, such as research and development and management. Those activities, often referred to as auxiliaries, have been reclassified by NAICS as service industries.

For the United States overall, about 8 percent of what was considered manufacturing employment under SIC has been moved into other categories in NAICS. About 3 percent was shifted to professional and business services, and slightly more than 4 percent was reclassified as information services–most of which was due to the reclassification of publishing activity.[4] The result was fewer jobs in the newly defined manufacturing industry. Some areas upstate saw a larger degree of reclassification from SIC to NAICS than others (see chart). These differences arise because some metro areas have more nonproduction activity within manufacturing companies located there. In particular, Rochester and Albany show a larger difference in manufacturing employment between the SIC and NAICS definitions than the nation does because their manufacturing companies have a relatively large share of service establishments. For example, in Rochester, headquarters for Eastman Kodak and office operations at Xerox were classified by SIC as manufacturing, but they moved into service categories under NAICS. Albany's difference between classification systems was nearly double the national difference. The share of manufacturing in the other four upstate metro areas changed less under the reclassification than the national share did–in Binghamton, significantly less. Those areas are home to manufacturing companies with relatively less service-based activity.

Manufacturing Employment Trends According to NAICS and SIC, 1990-2002



Sources: U.S. Department of Labor; author's calculations.

Note: We obtain the difference by taking average annual manufacturing employment from 1990 to 2002 and calculating the percentage by which the North American Industry Classification System (NAICS) average is less than the Standard Industrial Classification (SIC) system average.

Reclassification has also increased the measure of the manufacturing sector's decline in recent years. As the chart indicates, all metro areas upstate show a larger decline in manufacturing employment under NAICS, with the exception of Syracuse. NAICS manufacturing categories isolate production activity, so the industry's larger decline under NAICS reflects a more rapid decline in production employment relative to the service-based auxiliary manufacturing activity that has been reclassified into service categories. Syracuse's manufacturing employment decline was smaller under NAICS because the decline in its manufacturing production component was less pronounced than the decline in its manufacturing-based auxiliary service component.

Conclusion

The new North American Industry Classification System allows for a more thorough analysis of the modern service-based economy than the earlier Standard Industrial Classification system did. According to NAICS, upstate New York's largest industries are manufacturing, health care, and government--each having greater shares of employment as compared with the nation. The education sector, although smaller, is also a regional specialty, with an employment share double that of the nation. We also observe that many of the newly defined service industries, although the fastest growing nationwide, tend to be smaller and to grow more slowly in upstate New York than in the country overall. In addition, in the newly defined NAICS manufacturing sector, with the production component of manufacturing isolated from service-based auxiliaries, employment declines over the 1990-2002 period now appear to be more dramatic.

Viewing the economy through the NAICS lens offers a new perspective. However, the transition from the SIC system has a significant drawback. Because NAICS fundamentally reclassifies data, old and new data will not be directly comparable, creating a problem for researchers attempting to ascertain historical trends. Agencies have devised various tools and estimation techniques for comparison, but these methods are far from perfect. Thus, although NAICS offers a new economic view, researchers will have to forfeit some of their ability to analyze trends over time.

Notes:

[1] The background and history of NAICS, as well as industry descriptions, are from Office of Management and Budget, 1998, *North American Industry Classification System: United States, 1997*, Bernan Press.

[2] Data are collected for the mining sector. However, because mining employs very few in upstate New York, we exclude the sector from our analysis.

[3] The Bureau of Labor Statistics has created a data history dating back to 1990 by utilizing various estimation techniques. It began releasing NAICS-based data in June 2003.

[4] See <http://www.bls.gov/ces/cesnaics.htm >.

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