



CENTER ON URBAN AND METROPOLITAN POLICY

Transition and Renewal: The Emergence of a Diverse Upstate Economy

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Findings

An analysis of economic trends in Upstate New York finds that:

- **The economy of Upstate New York, by nearly all major measures, worsened in the 1990s, lagging both the nation and its own performance in the 1980s.** After growing 26 percent in the 1980s, for example, Upstate's total real personal income in the 1990s increased by only 9 percent, compared to 29 percent nationwide. Upstate's earnings and employment growth also slipped in the 1990s, and overall growth rates for each were considerably lower over the two decades than those experienced by U.S. as a whole. All this came despite significant improvements in the share of Upstate residents with college educations.
- **Higher education is a key contributor to Upstate's economy, but many students leave when they graduate.** Upstate's ratio of educational institutions to residents is 24 percent higher than the nation's, and 27 percent higher than downstate. But while Upstate attracts substantial numbers of college students from elsewhere, many more young working-age adults leave the state.
- **Health care is the fastest growing sector in Upstate and now employs a larger share of Upstate residents than the national average; however, average wage growth in this sector lags the nation.** Private sector employment in the region's healthcare sector increased 75 percent between 1980. In 2000 over 9 percent of its jobs were in health services, compared to 7 percent nationwide. Average annual wages per job in this sector are only three-quarters of the national average, however.
- **Upstate's regional economies do better when they are based upon diverse economic activities and when major employers have incentives to offer wages high enough to attract and retain highly skilled workers.** Only when these conditions are in place will Upstate get both more jobs and improvement in wages per job, both of which are critical to Upstate's prosperity.

In sum, long-term structural changes in the Upstate economy have weakened the region's economic health, and necessitate policy changes to ensure the region renews its drifting economy. Such adjustments offer good promise of the region leveraging its strengths in higher education, health care, and manufacturing into long-term growth and job-creation in both established and emerging industries.

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Introduction

During the 1900s, the U.S. transitioned from an economy based largely on manufacturing to one in which almost all jobs are in services. This transition has rearranged the economic fortunes of regions throughout the nation: Locations in the Sunbelt and on both coasts prospered in the 1970s as traditional manufacturing centers in the Midwest declined. But such “rust belt” states as Ohio, Indiana, and Michigan rebounded in the late 1980s and early 1990s as the hemorrhage of manufacturing jobs abated and service-sector and finance jobs surged. While their recovery has not returned these states to the pre-eminence they enjoyed in the 1960s, it has disproved many forecasts of inevitable decline for the nation’s industrial heartland.

Much of Upstate New York was built on the same industrial base as other states that border the Great Lakes. The manufacturing of steel, automobiles, fabricated metal products, and industrial machinery anchored the economies of Buffalo, Syracuse, Jamestown, Utica, and Schenectady. Buffalo was also a key Great Lakes port. Rochester and Binghamton, the birthplaces of Kodak, Xerox, and IBM, differed from other Upstate and Great Lakes manufacturing centers in the intensity of research and development but were, if anything, even more reliant on manufacturing than most other Upstate cities and metropolitan areas.

Unlike most other Great Lakes states, however, Upstate New York has not recovered from the deindustrialization that began to sweep the United States in the 1970s. To the contrary, Upstate’s economy remains depressed, a condition that was evident in the 1980s and worsened in the 1990s. This report documents the extent of that malaise, but it also shows that the long transformation of the Upstate

economy from strong dependence upon manufacturing to greater dependence on knowledge-based services has positioned the Upstate economy for future expansion. In particular, education and health care will be central to Upstate’s new economy in the next 20 years and business and professional services can support a more stable manufacturing base in the years to come.

Methodology

For this study, Upstate New York consists of the 52 counties north and west of the New York Primary Metropolitan Statistical Area (PMSA). Of those 52 counties, 28 are parts of 11 metropolitan areas, and 24 are non-metropolitan. We also divide the state into six major regions that include both metropolitan areas and rural counties. The analysis covers the period from 1980 to 2000.

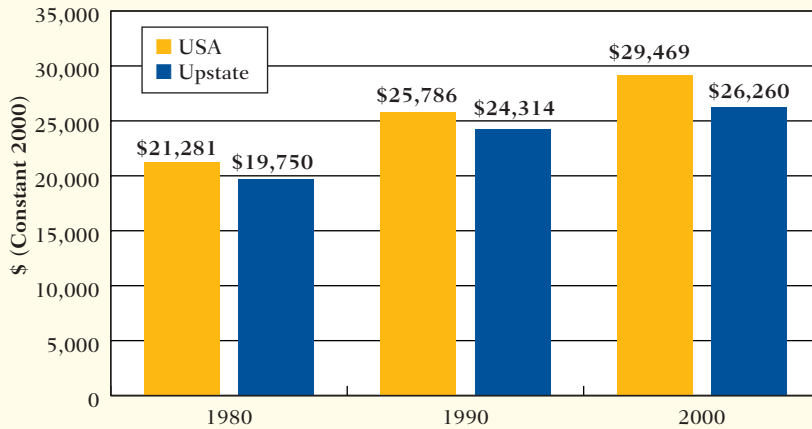
Most of the data used for this report comes from the Regional Economic Information System (REIS) of the Bureau of Economic Analysis, U.S. Department of Commerce. The REIS data includes population, personal income and its components, employment by broad sectors, and earnings by detailed, two-digit Standard Industrial Classification (or SIC) industries for all counties and metropolitan areas of the United States annually back to 1969. In the REIS, the current metropolitan area definitions are fixed back in time so that the spatial definitions are consistent for the period covered. The REIS earnings and employment data are by place of work, not place of residence. The REIS employment data are more comprehensive than the more commonly used U.S. Department of Labor’s nonagricultural establishment employment data because they include agricultural—as well as forestry and fisheries—employment, and include the self-employed. We obtained a special tabulation of both

employment and wages for Upstate New York and its six main regions at the two-digit SIC level from the New York State Department of Labor that avoided problems of data suppression commonly associated with this data source and that allowed us to compare Upstate more comprehensively with the rest of the United States. Both series count jobs rather than employed persons.

This report also relies on the most recent U.S. Census of Population and Housing and 2000 Supplementary Survey for information that REIS cannot provide. In particular, all government workers—regardless of their industry—are classified as government employees by REIS. Upstate’s economy is heavily reliant on health care and education, both of which include substantial government employment in county and Veterans Administration hospitals and in the State University of New York system. Where we report detailed information on health care and higher-education employment, therefore, we use Census tabulations.

In general, however, the decennial Census differs from the REIS in important ways that make it a less useful tool for understanding regional economies. First, standard tabulations report the industry and occupation by place of residence rather than by place of work, providing a picture of what residents of a place or region do but not necessarily describing the region’s economic base. Standard tabulations also fail to provide information on earnings by industry, which the REIS does. The Census of Population reports only the primary job of the respondent, meaning that the additional jobs of multiple job-holders are left uncounted. Finally, the Census shifted to a new industrial classification system in 2000 is incompatible with those used in previous years, whereas REIS’s classification system has remained consistent through time.

Figure 1. Per Capita Income, Constant 2000 Dollars, U.S. and Upstate, 1980–2000



Both the REIS and Census offer fine-grained detail about economic activities that we have aggregated into larger sectors. The largest aggregation is into traded and non-traded goods and services. The industries that produce goods and services that can be traded beyond a region's borders are the drivers of a regional economy. The industries that produce non-traded goods and services simply respond to expansion or contraction of the traded goods and services sector. At a finer level of detail, this report sorts traded goods and services into two main sectors. The *goods production and distribution* sector includes primary production (agriculture, forestry, fisheries, mining, and primary metals production, e.g., steel), manufacturing, and distribution. The *information* sector includes financial producer services (banking, securities, insurance, real estate), other producer services (business services, legal services, professional services), and advanced consumer services (health care, education, and recreational services).²

Findings

A. The economy of Upstate New York, by nearly all major measures, worsened in the 1990s, as compared to the nation and to its own performance in the 1980s.

After rising 26.4 percent in the 1980s—only slightly less than the nation's 33.2 percent increase over the decade—Upstate's total real personal income in the 1990s grew by only 9 percent, compared to 29.2 percent nationwide.³

The best measure of living standards available annually—per capita personal income—highlights the worsened economic condition of Upstate New York in the 1990s. In 1980, Upstate's real per capita personal income was \$19,730, or about 7 percent below the national average of \$21,259 (Figure 1). From 1980 to 1990, per capita personal income grew slightly faster in Upstate than in the nation without closing the gap entirely. Upstate's growth in per capita income slowed in the 1990s, however, so that by 2000 its real per capita personal

income was 11 percent below the national average, a deterioration of its relative position over 20 years. This deterioration contradicts economic theory, which suggests—with strong support from empirical evidence—that per capita personal incomes of states tend to converge around the national average.

The largest component of personal income, and the measure that directly reflects economic activity, is earnings. For the United States, earnings were 73 percent of personal income in 2000 while in Upstate New York earnings were 67 percent. (Other income is derived from government transfer payments, dividends, rent, and interest.) Total real earnings in Upstate New York were almost \$96 billion in 1980 and \$121 billion in 2000, a rise of 27.1 percent. Over the same 20 years, total real earnings in the United States rose 68.4 percent. That large difference reflects in part the much lower population growth Upstate, but it also reflects stagnant growth in real wages per job. In 1980 the real average annual wage in Upstate New York was \$31,003, about \$600 lower than the national average. Growth to 1990 was slightly less Upstate than in the United States, raising the difference to about \$1,100. However, in the 1990s, the real average wage dropped slightly in Upstate New York while rising almost 10 percent in the nation. Thus by 2000 the Upstate average real wage lay some \$4,600 below the national average. Over the full 20 years, real average wages in Upstate New York rose only 2.3 percent compared with a 14.9 percent rise for the nation (Figure 2).

Employment in Upstate New York, including self-employment, rose from just under 3.1 million in 1980 to 3.6 million in 1990—a gain of 17.5 percent. The national gain for those ten years was somewhat larger: 22.1 percent. In the 1990s, however, Upstate New York saw less than half as large an employment gain as in the 1980s,

while the nation's progress about equaled its 1980s gain. Upstate's employment declined substantially between 2000 and 2003, moreover, paralleling the nationwide decline in employment that began in mid-2001 and accelerated with the full onset of the recession and the effects of September 11, 2001. According to the Current Employment Statistics Survey, Upstate had just under 3.1 million non-farm jobs in July 2003—a 1.51 percent decline since July 2000. Over the same two-year period, the U.S. lost 1.65 percent of its non-farm employment (a total of 2.2 million jobs). Between January 2002 and July 2003, total employment in Upstate New York oscillated within a range between 0.25 and 2.3 percentage points below levels from the same month in 2000, when Upstate's economy was at its recent high-water mark in employment terms.

The only broad economic measure for which Upstate New York has recently outperformed the United States is in the receipt of transfer payments, a measure of dependence on government. In 1980, transfer payments represented 12.1 percent of the nation's personal income, while in Upstate New York they represented 14.3 percent. Over the next 20 years, the difference became larger: By 2000 the national transfer payments share grew slightly to 12.9 percent, while across Upstate it shot up to 17.1 percent.

B. Upstate's economy is diversifying as its information sector grows, but Upstate still depends heavily upon manufacturing.

Because of deindustrialization, Upstate is now a more diversified region whose economy resembles the rest of the United States more than it did in 1980, though it still remains more dependent upon goods production and less upon informational activities than the rest of the United States.⁴ (Figure 3 portrays these comparisons with shades of blue standing for goods

Figure 2. Average Wages per Job, Constant 2000 Dollars, U.S. and Upstate, 1980–2000

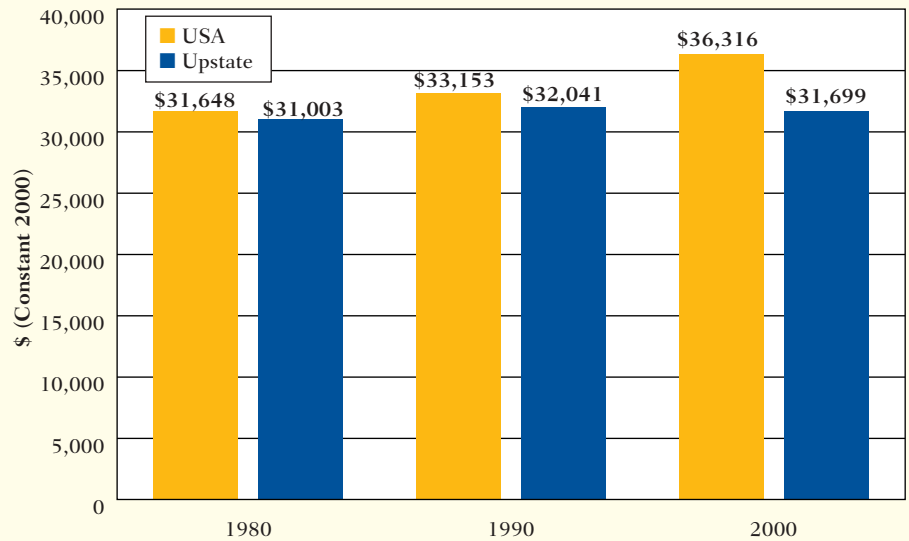
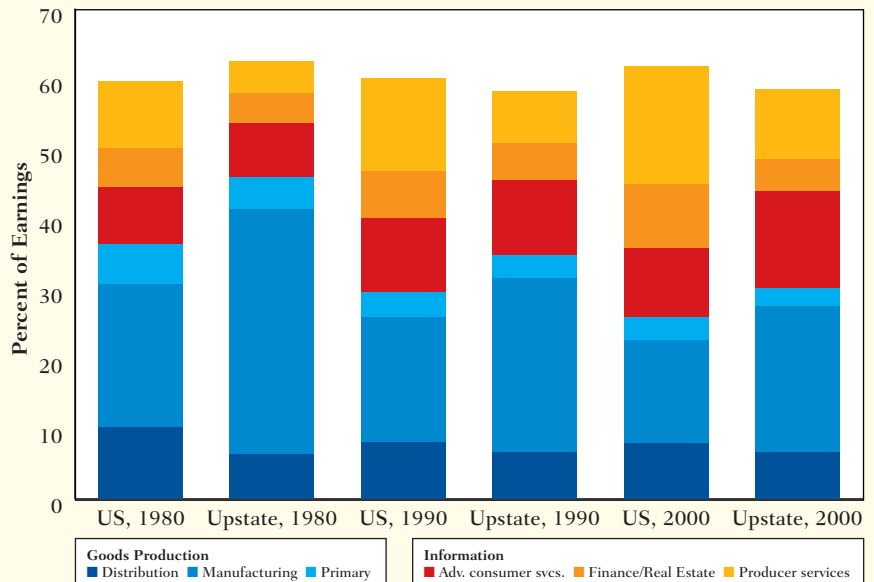


Figure 3. Percentage of Civilian Earnings from Major Traded Goods and Services, U.S. and Upstate, 1980–2000



production and distribution sectors and shades of oranges indicating information sectors.) In 1980, goods production and distribution (GPD) accounted for 46 percent of Upstate's real earnings, compared with 37 per-

cent for GPD at the national level. By 2000, the GPD sector contributed only 26 percent of earnings to the Upstate economy, compared with 26 percent in the U.S. as a whole. Upstate's GPD sector declined in

absolute terms from \$32.7 billion to \$28.0 billion between 1980 and 2000, a 14 percent decline; GPD in the U.S., by contrast, rose from \$1.3 trillion to \$1.5 trillion, even though GPD accounted for a much smaller share of national earnings in 2000 than it had in 1980.

The goods production and distribution (GPD) category contains manufacturing, distribution, and primary production activities, but most of the jobs and income in GPD in Upstate—and thus most of the losses in GPD since 1980s—have been in manufacturing. Real earnings from manufacturing fell by \$4.6 billion (24.1 percent) over the two decades between 1980 and 2000. By 2000, manufacturing accounted for 21 percent of Upstate's earnings, compared with 14 percent of U.S. earnings. Upstate's manufacturing sector remains, then, an important contributor to its economy. But its manufacturing sector pays less for every manufacturing job—about \$46,650 in 2000—than the average for manufacturing in the United States of over \$51,300 per job. This wage gap has grown since 1980, when Upstate's manufacturing jobs paid about 4 percent less than those nationwide. This differential almost certainly discourages skilled manufacturing workers from remaining in Upstate.

Meanwhile, earnings in the Upstate information sector—consisting of financial producer services, other producer services, and advanced consumer services—grew in real terms from \$11.6 billion in 1980, to \$19.5 billion in 1990, to \$25.7 billion by 2000 (28.0 percent of earnings). This made the information sector almost as large as the Upstate GPD sector. But information-sector industries still contributed a far smaller share of earnings to the Upstate economy than they did to the U.S. economy as a whole in 2000, when information-sector industries contributed 36 percent of national earnings.

On average, jobs in information-sector industries pay much less than those in the goods-producing sectors. Indeed, the loss of goods-producing and the gain of informational jobs explain why average wages per job fell in Upstate in the 1990s. In 1980, the average real wage per job in the information sector was only \$25,560 in Upstate—only 65 percent of the nearly \$39,000 paid per job in the GPD sector. By 2000, the average information-sector job paid \$32,440—still only 75 percent of the average manufacturing job. When viewed in a national context, Upstate's information-sector jobs look even less desirable: On average, they pay only 80 percent of the average wage per information job nationwide—a gap that widened between 1980 and 2000.

The information economy has three distinct sub-sectors, as shown in Figure 3. Financial producer services includes banking, brokerages, insurance, and real estate. Other producer services include communication, business services (a very large group of diverse services to producers), legal services, and engineering and management services. Advanced consumer services, finally, includes health and education services and a variety of cultural and entertainment activities. Upstate's strength in the information sector is heavily concentrated in advanced consumer services, especially in health and education. These two sectors constitute a critical strength now; we also believe they represent the base on which a revitalized Upstate economy can rest. For this reason we discuss them at greater length in the next two sections.

C. Higher education is a key contributor to Upstate's economy, but many students leave when they graduate.

Higher education is a key to the information economy, and Upstate specializes in it. Upstate is home to 206 active higher-ed institutions—29.8 for

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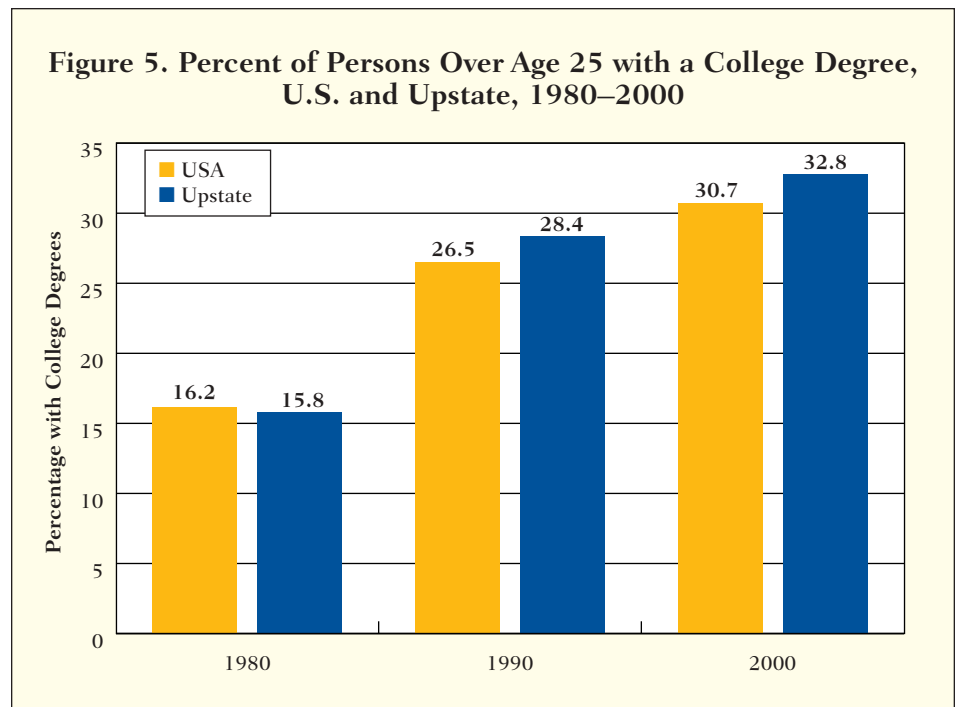
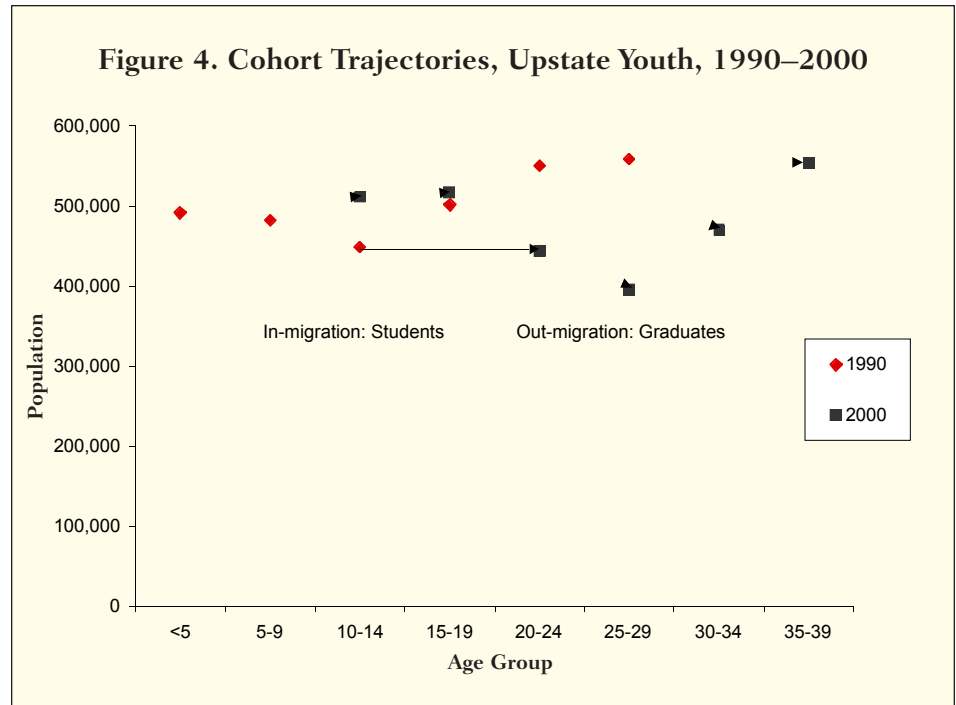
in it.”

every million Upstate residents, a ratio 24 percent higher than that of the United States as a whole (24.1 per million) and 27 percent higher than Downstate (23.5 per million). In 2000, Upstate's institutions of higher learning employed about 117,500 people, about 3.7 percent of total civilian employment, and in some parts of Upstate—especially such large non-metropolitan counties as St. Lawrence and Tompkins Counties—higher education constitutes an even larger share of employment. About 2.3 percent and 2.2 percent of employed residents worked in higher education in Downstate and the U.S. as a whole, respectively.⁵

Higher education contributes to Upstate's economy in at least three ways: Through the direct expenditures on higher education and the indirect (multiplier) effects it generates; by bringing out-of-state dollars into Upstate; and by educating the future labor force. Education enhances productivity, and productivity growth is essential for economic success—especially for states like New York whose population and labor force are not growing rapidly.

No available studies have examined the economic impact of higher education to Upstate alone, but various data suggest that the contribution of higher education to the state as a whole is substantial. In 1995, higher education institutions employed over 160,000 full-time and nearly 86,000 part-time workers statewide.⁷ Meanwhile, their activities generated direct and indirect (multiplier) economic impacts of between \$40 and \$55 billion annually—up to 10 percent of the gross state product in 1994–1995.⁸

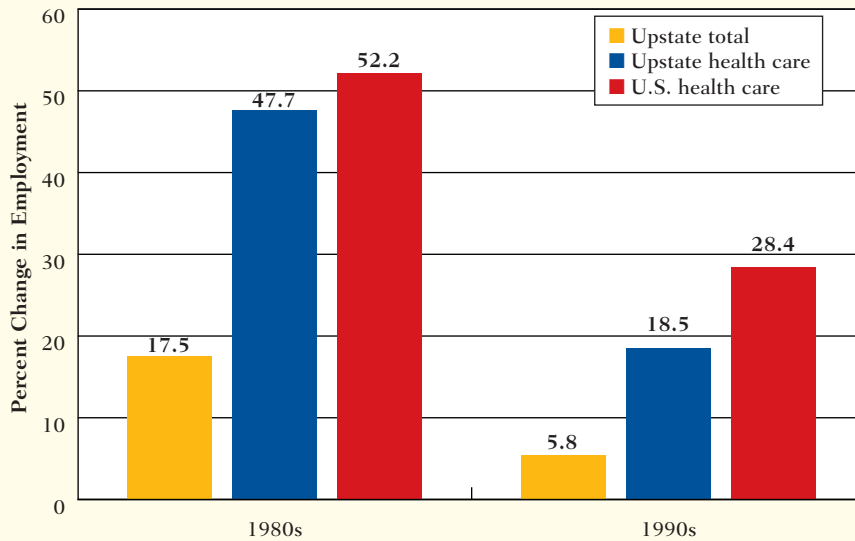
Education is also a fundamental economic activity for Upstate in a very positive way: A higher-than-average number of Upstate residents are in college. In 2000, seven (7.0) percent of the population of Upstate New York over the age of 3 was enrolled in college or graduate school, nearly



470,000 students in all. This makes college and graduate students slightly more concentrated in Upstate New York than in the U.S. as a whole, where 6.5 percent of residents over three years old were in college or graduate school in 2000.

On net, Upstate attracts college-age residents from elsewhere, as evidenced by Figure 4. In 1990, there were 482,300 children between the ages of five and nine living in Upstate New York. By 2000, this group (or “cohort”) of children—who would have been

Figure 6. Percent Change in Employment, Health Care and Total Employment, U.S. and Upstate, 1980–2000



between 15- and 19-year-olds—numbered 515,580, a 6.9 percent increase that could only have occurred because of net in-migration into Upstate of teenagers. This five-year cohort was one of only two cohorts that increased on net for Upstate in the 1990s; the other one was the group of children under five in 1990 (aged 10 to 14 in 2000), which grew four percent to 510,450 in the 1990s.⁹

But Upstate loses many residents once they reach their early 20s. Upstate gains 15- to 19-year-olds as they begin college (Figure 4). A first, small wave begins to leave immediately after college (those who were aged 20 to 24 years old in 2000) and a larger wave leaves in their mid to late 20s. The exodus begins to taper off for those reaching their early 30s and stops for those who stay to their mid to late 30s.

Important as higher education is, New York's taxpayers spend less per capita and as a share of their income to support it than do those in many other states. In Fiscal Year (FY) 2003, New York appropriated just under \$200 per capita, less than 33 other states. New York spends significantly

less than other economic competitor states such as North Carolina (\$295), Texas (\$239), and California (\$273). As a comparatively wealthy state, New York ranks even lower—in 41st place—among states for its higher education appropriations per million dollars of personal income.¹⁰

Even with relatively low public investment levels and the substantial outflow of post-college age adults, however, the share of Upstate adults with at least a college education has grown faster than that among adults nationwide.¹¹ In 1980, only 15.8 percent of Upstate adults had college degrees, compared to 16.2 percent nationwide (Figure 5). In the 1980s, the shares jumped to 28.4 percent for Upstate and 26.5 percent for the United States, and by 2000, 32.8 percent of Upstate residents had college degrees—again a larger share than across the United States as a whole (30.7 percent). This increase in the level of human capital in Upstate is all the more startling when considered against the backdrop of wages that are falling and remain well below the national average levels.

D. Health care is the fastest growing sector in Upstate and now employs a larger share of Upstate residents than the sector's average in the nation; however, average wage growth in the sector lags the nation.

Over 9 percent of Upstate private-sector jobs were in health services in 2000, compared to just 7 percent nationwide. When employment in government hospitals and clinics and self-employment are added to the private-sector employment, about 10.9 percent of Upstate's employed residents are primarily employed in health services, compared with only 9.2 percent of U.S. workers.¹² As of April 2003, Upstate had 129 hospitals with a total of 20,555 beds, including 14 teaching hospitals.¹³ (Downstate New York, by contrast, had 126 hospitals with 43,853 beds, and 47 of its hospitals were teaching hospitals.) Additionally, of course, Upstate has thousands of offices of doctors and other health practitioners—more than can be counted using conventional data sources because many practitioners are self-employed.

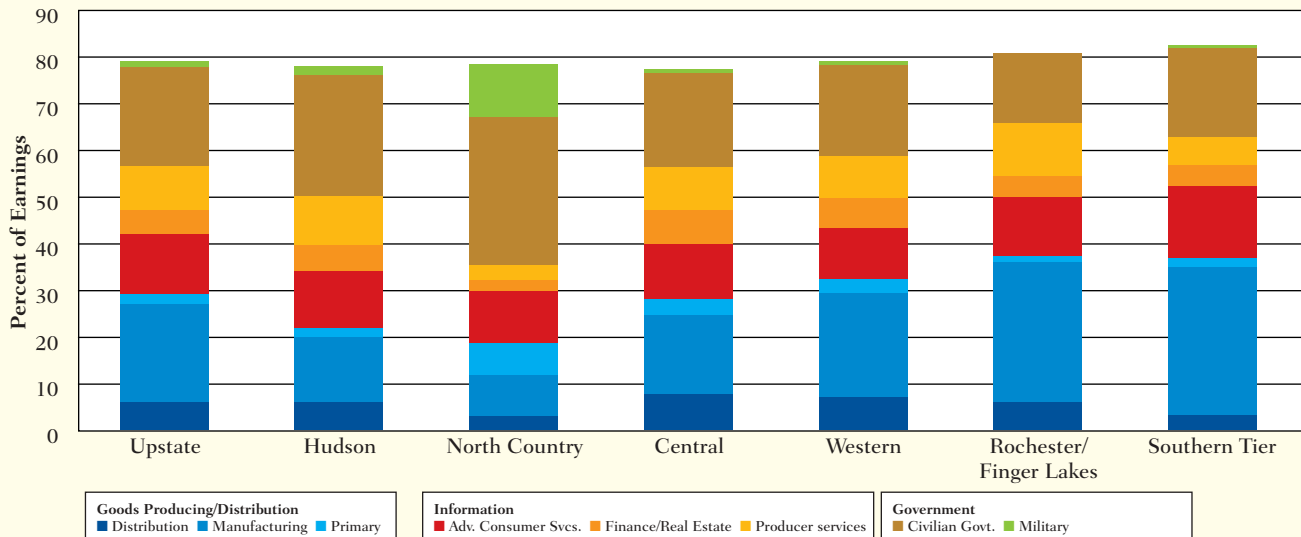
Employment in health care has risen much more rapidly than in other sectors Upstate; private-sector employment in the sector increased over 18 percent in the 1990s after a 48 percent gain in the 1980s, adding up to a 75 percent gain between 1980 and 2000 that tripled overall job growth in the Upstate economy (Figure 7). Upstate still lagged the rest of the United States in job creation in this sector, but given Upstate's underlying slow population growth and anemic economy, the expansion of the health care sector represents a definite high point for the region. Upstate's health services sector also yielded reasonable growth in average wages per job between 1980 and 2000, with a significant 23 percent increase from its base of about \$23,200 per job in 1980 (2000 dollars) to \$29,900 in 2000. This still leaves health care less well paid per job than the average Upstate

Table 1. Earnings, Employment, and Average Earnings per Job, Upstate Regions and U.S., 1980–2000

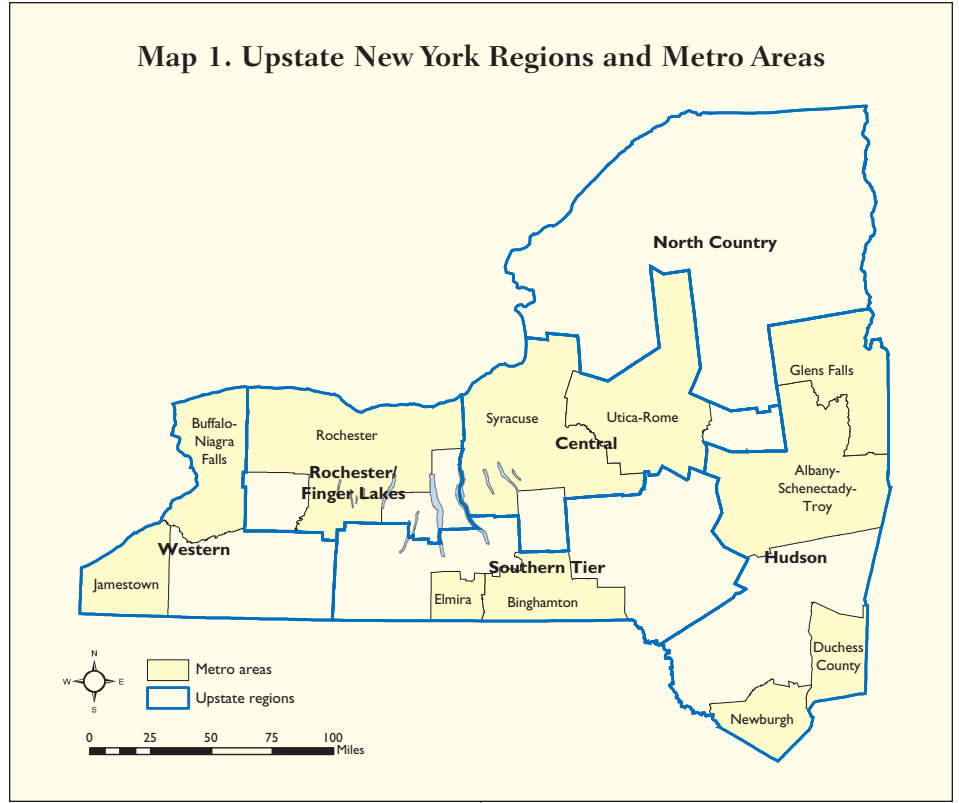
Region	Earnings (\$ millions)			Employment		
	1980	1990	2000	1980	1990	2000
Central	\$15,879	\$19,363	\$19,432	521,775	614,829	631,034
Hudson	24,291	32,733	35,253	808,891	1,000,861	1,089,747
North Country	4,181	5,786	6,005	156,305	202,058	211,824
Rochester/Finger Lakes	19,051	22,480	23,424	557,437	654,349	709,118
Southern Tier	9,579	11,534	12,217	332,988	383,301	398,536
Western	22,546	24,181	25,117	706,910	767,336	791,044
Upstate	95,527	116,076	121,449	3,084,306	3,622,734	3,831,303
U.S.	\$3,615,178	\$4,622,364	\$6,088,880	114,231,200	139,426,900	167,283,800
Region	Percent change, earnings			Percent change, employment		
	1980–1990	1990–2000	1980–2000	1980–1990	1990–2000	1980–2000
Central	21.9	0.4	22.4	17.8	2.6	20.9
Hudson	34.8	7.7	45.1	23.7	8.9	34.7
North Country	38.4	3.8	43.6	29.3	4.8	35.5
Rochester/Finger Lakes	18.0	4.2	23.0	17.4	8.4	27.2
Southern Tier	20.4	5.9	27.5	15.1	4.0	19.7
Western	7.2	3.9	11.4	8.5	3.1	11.9
Upstate	21.5	4.6	27.1	17.5	5.8	24.2
U.S.	27.9	31.7	68.4	22.1	20.0	46.4

Note: All dollars are constant 2000 dollars deflated with the average national CPI-U for the relevant year.
 Source: US Bureau of Economic Analysis, Regional Economic Information System

Figure 7. Percent of Earnings from Major Traded Goods and Services and Government, Upstate New York Regions, 2000



Average earnings per job			
	1980	1990	2000
	\$30,432	\$31,493	\$30,794
	30,030	32,704	32,350
	26,746	28,633	28,347
	34,176	34,355	33,033
	28,766	30,092	30,656
	31,894	31,513	31,752
	30,972	32,041	31,699
	\$31,648	\$33,153	\$36,399
Percent change, avg. earning			
	1980–1990	1990–2000	1980–2000
	3.5	-2.2	1.2
	8.9	-1.1	7.7
	7.1	-1.0	6.0
	0.5	-3.8	-3.3
	4.6	1.9	6.6
	-1.2	0.8	-0.4
	3.5	-1.1	2.3
	4.8	9.8	15.0



job (which paid about \$31,200 in 2000), but the growth rate in per-job terms was much greater for health care than the measly increase in earnings per job across Upstate between 1980 and 2000 (and the loss in the 1990s).

Reassuring though this wage growth may be compared to other Upstate job types, wages in Upstate’s health care sector have slipped considerably behind those across the U.S. as a whole. Whereas Upstate’s average health care wage in 1980 exceeded the nation’s by 43 percent, by 2000 the national average wage had increased to over \$40,000, so that Upstate’s average wage was now only about 75 percent of the national average. These differences probably result from the

health needs of Upstate senior citizens. Upstate has disproportionate numbers of workers in home health care, nursing care, and residential care facilities; these relatively low-wage (and frequently part-time) jobs account together for about 29 percent of Upstate’s health employment, compared with only about 23 percent of national health-sector employment. Hospitals, by contrast, account for about 41 percent of employment in this sector compared to 43 percent nationally.

E. Upstate’s regional economies do better when they are based upon diverse economic activities and when major employers have incentives to offer wages high enough to attract and retain highly skilled workers. We have identified six major regions in Upstate New York that differ in important ways from one another (see Map 1). All six regions of Upstate have been affected by firm downsizing and exit from New York and the Northeast, a

long-term structural shift that has deeper causes than we can address in this report. But there is also diversity among the regions. Upstate is not a single economy; indeed, the trends affecting Upstate regions encompass economic trends and conditions found in various parts of the United States.

Three factors appear to explain the differences in the levels of employment and average wage growth among these regions. Labor market competition from other parts of the country, first, influences the extent to which workers will remain in Upstate and accept its lower average wages. Unionization, second, influences the extent to which well-paid workers can keep their own jobs from being outsourced, moved abroad, or eliminated, although it does not protect non-unionized jobs. And finally, economic diversity helps shield against rapid downturns; the more diverse the region and the less it relies on manufacturing, the fewer jobs it loses in a downturn.

The first two factors, in different

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combinations, help explain the differences among the four regions west of the Hudson. **Rochester** has long led Upstate New York in its reliance on goods production and distribution (GPD) for employment and earnings; in 2000, 38 percent of its earnings came from GPD, the highest of any Upstate region and well above the national level of 26 percent (Figure 7).¹⁴ Its continued strength in manufacturing—especially comparatively high-tech instrument manufacturing—explains why Rochester maintains higher average wages per job than any other Upstate region (Table 1). Kodak, Xerox, and Bausch and Lomb—Rochester’s three biggest employers—moved substantial production abroad in the 1990s and outsourced many jobs within the region. Even as these firms restructured, however, regional employment grew by 8.4 percent because Rochester retained important advantages in optics and imaging technology. But as this growth occurred, the average wage per job in the region slipped by 3.8 percent, from \$34,355 to \$33,035. This wage deterioration was the most marked of any of the six Upstate regions; the Rochester area also had the second-weakest wage growth of any Upstate region in the 1980s of only 0.5 percent. This occurred in part because unions are comparatively weak in Rochester and could not protect mid-level workers from wage pressure. In 1999, only 13 percent of manufacturing workers in Rochester were covered by union contracts, compared with a staggering 37 percent of those in Buffalo.¹⁵ Furthermore, practically no other regions in the United States had jobs to offer the mid-level and lower-wage workers in Rochester’s highly specialized photographic instrument and photonics industries. Without the pull of better jobs in another region, these workers stayed in Rochester despite weak wage-growth prospects.

The economies of the **Southern Tier** and **Western New York** looked

almost like inverses of that in Rochester in the 1990s. Employment grew by a modest 4.0 percent in the Southern Tier and 3.1 percent in Western New York, in part because of firm down-sizing and labor force exit. But these two regions were the only two in Upstate whose average wages per job grew in the 1990s (by 1.9 percent in the Southern Tier, and 0.8 percent in Western New York). These increases gave the Southern Tier the second-highest wage growth per job of any Upstate region between 1980 and 2000 and allowed Western New York to regain some ground it lost in the 1980s when its economy was at its nadir. This competitive performance can be attributed in Buffalo to its strong unions, which have safeguarded better-paid jobs. The Southern Tier, by contrast, is anchored by universities, hospitals, and selected high-tech manufacturing operations that must attract and retain skilled workers. The best-educated workers in the Southern Tier have many more options in the national and international labor market than do the highly educated workers in Rochester, who are employed in activities that Rochester does better than most others in the United States.

Central New York, finally, enjoyed only 2.6 percent employment growth (the lowest in Upstate) and a decline of 2.2 percent in real wages per job. New jobs have come on line in information activities—especially health care and business services—but they pay much lower wages than the lost jobs, most of which have been comparatively well-compensated manufacturing jobs. The closure of Griffiss Air Force Base in 1994 further hindered the region’s recovery. Central New York does not offer high enough wages to most workers, especially recent college graduates, to encourage them to stay. Unlike Rochester, Central New York does not concentrate on a set of economic activities that would force specialized workers to stay and accept relatively lower wages. Nor does Cen-

tral New York feature either unions as strong as those in Western New York or a concentration of businesses like those in the Southern Tier that compete with high-wage locations nationally for highly educated and well-paid workers.

The **Hudson Valley** is the Upstate region that most closely resembles the rest of the United States. It has long been—and remains—highly dependent on the information sector and government, while relying hardly at all on manufacturing. Its job growth led Upstate in the 1990s and was second only to the North Country in the 1980s. Wages per job grew by nearly 9.0 percent in the 1980s but declined 1.1 percent in the 1990s because its information-sector jobs are poorly compensated. Even so, its average wage per job at \$32,350 remains second in Upstate only to the Rochester region. This high average figure may reflect the inequality of information sector wages as compared with those in manufacturing. To an extent, the Hudson Valley has been able to maintain and expand its labor force even though its wages are lower than those in locations outside New York State. It has done so first because of the “captive” nature of labor for state government in Albany (which pays relatively well and offers good benefits). Furthermore, the counties closest to New York City have become increasingly integrated into the metropolitan New York economy, which prospered in the 1990s as Upstate languished.

The **North Country**, like many remote rural areas, depends on government spending for military bases and prisons. Its employment growth of 35.5 percent between 1980 and 2000 is entirely a function of increases in that spending, which did not abate when the recession that began in 2001 gripped the nation and accelerated with the initiation of military action in Afghanistan and Iraq. Correctional officers’ unions, furthermore, have formed a key constituent in the lobbying coal-

tion that has convinced the state legislature to maintain punitive drug laws, thereby boosting prison population and prison employment in Upstate in the 1990s.¹⁶ But although average wages per job grew by 7.1 percent in the 1980s in the North Country, they declined by 1.0 percent in the 1990s.

Upstate regions in which manufacturing is less important tend to fare better than the national average. Between 2000 and 2003, employment grew in the Hudson Valley by 1.4 percent and in the North Country by 2.4 while it contracted by 1.6 percent nationally. These economies have had better performance in part because government spending has remained stable and in part because they specialize in information-sector industries that have been spared to some extent from the recent recession. The Hudson Valley, of course, has also been a destination for suburbanizing jobs from New York City.

Among the four regions in which manufacturing is more important, diversity has reduced distress in the last recession. Western and Central New York had much more diversified economies in 2000 than Rochester’s or the Southern Tier’s. Probably as a result of this diversity, these two regions have incurred slower job loss since 2000 than the other two regions west of the Hudson. In fact, between July 2002 and July 2003, Central New York led Upstate in its job growth of 1.45 percent, but this still left Syracuse, Utica, and outlying areas with about 5,000 fewer jobs than they had three years previously. Rochester and the Southern Tier, by contrast, both rely more heavily on manufacturing, and more of their manufacturing jobs are concentrated in a small number of manufacturing sectors. Rochester lost 5.1 percent of its jobs between July 2000 and July 2003; the Southern Tier lost 4.3 percent of its jobs, erasing more than all the jobs gained in the 1990s.

Conclusions and Policy Implications

The story of the Upstate New York economy from 1980 to 2000 is a story of the continuing decline of manufacturing activity in a region where manufacturing was once the prime driver of the economy. This transformation has reduced wages and depressed job growth for at least the last 10 years. By now, however, information jobs outnumber manufacturing jobs and indeed are almost as large as the entire goods production and distribution sector. Consequently, the Upstate economy is poised to avoid the wage stagnation it faced in the 1990s as the loss in manufacturing jobs slows and higher wage, knowledge-intensive information-based jobs expand. Furthermore, wages should increase to reflect the above-average concentration of college-educated people in Upstate.

This turnaround can be made much more decisive, however, with deliberate and concerted policy efforts from the state level, aided by federal investments. We see three main areas in which policy can make a big difference. First, state policy should focus relentlessly and strategically on export industries, those activities that directly contribute to the generation of new wealth for Upstate, taking special interest in the region’s comparatively strong education and health care sectors as centers for innovation. Second, the state should continue to invest, and invest more, in social and physical infrastructure systems that enable economic growth. Third, since these policies will build the future Upstate economy upon a base of government and non-profit institutions (universities, colleges, and hospitals), it will also need to reform local government finance.

A. Focus strategically on nurturing innovative export industries.

The state's economic development efforts must focus on traded goods and services. These economic activities are essential to regional economic growth because they bring outside wealth into the Upstate economy, where it recirculates and helps create additional jobs. Primary emphasis should be placed upon enhancing the competitiveness of higher education and health care, two sectors in which Upstate is already competing very effectively and in which substantial innovation occurs. State and federal policy could foster a higher education network that would create synergies among Upstate's many institutions of higher education, uniting them around common agendas for teaching, research, and outreach that will benefit Upstate New York. State and federal investments in health care, too, must continue as crucial support for Upstate's community and teaching hospitals.

At the same time, economic development policy should not ignore manufacturing, which still pays higher wages and offers better benefits than the low-wage, often part-time, jobs in information-sector industries. Policy emphasis should be placed on innovative and knowledge-intensive manufacturing activities, such as those in photonics, environmental engineering and specialized food processing. Investments that enable manufacturing to enjoy more stable employment and higher average wages are essential because Upstate still has a competitive advantage in manufacturing. But a full rebound in manufacturing is unlikely, and even stabilization will be difficult in regions like Rochester and the Southern Tier that depend disproportionately on only one or two manufacturing sectors (and on one or two companies).¹⁷

One option that would benefit higher education, health care, and manufacturing would be a state venture capital fund specifically directed

to making connections among these three areas of economic activity. Most venture capital in the booming 1990s was raised in New York City and California but followed innovative firms that grew in Massachusetts and Texas. To finance start-ups from university science, medical, and engineering research, New York State should consider earmarking 1 percent of state employees' pension funds to finance a venture capital fund that would only finance spin-offs from research at public and private universities in the state. The rich university and hospital resources of Upstate New York would benefit, as would the Upstate economy, especially if these investments are coupled with a deliberate and detailed program to track recent graduates into the jobs created as a consequence of pension-fund investment.

The use of such a venture capital fund would need to differ substantially from current state economic development policy, which subsidizes firms of many kinds without strong regard for their strategic contribution to the Upstate economy. This approach does not build the conditions necessary for the creation and maintenance of high-wage jobs. Long experience shows that scattershot, firm-specific subsidies can result in a "race to the bottom" among and within states and accounting tricks that credit firms with job creation when they only move jobs from one location to another within the state. Adversarial businesses sometimes feel no compunction about violating their agreements, downsizing or eliminating operations entirely soon after they accept large subsidies.

Inevitably, economic development will include some firm-specific subsidies. But there are many ways in which New York State could improve the use of these subsidies, even beyond the establishment of a targeted venture capital fund. The state could require cost-benefit studies before it or any other unit of government offers large tax incentives to specific firms,

considering not only the fiscal but also the social effects of the investment as well as the benefits that could be attained by an equal investment in other activities.¹⁸ The state could also serve as a central monitor of net job creation at the county and regional level, establishing incentives for real job creation and penalties for subsidy shell games. In particular, the state should take steps to prevent competition among IDAs, which simply serves to move jobs around, not to create more jobs in the state. Third, the state could establish stronger guidelines to assure that subsidies are awarded to firms involved in the traded goods and services sectors; at present, many county industrial development agencies (IDAs) provide subsidies for retail operations, which seldom provide the economic multiplier effects that other activities do.

B. Invest in social and economic infrastructure.

Upstate was built on the spine of some of the most advanced infrastructure of the 19th century. The Erie Canal brought Upstate close to the rest of the world, and the rapidly developed railroads only reinforced that proximity. To remain connected with the rapidly globalizing economy, Upstate needs 21st century infrastructure. Manufacturing in Upstate has been hindered by the high costs of reaching markets; investments in infrastructure will help overcome those disadvantages. Investments in such social infrastructure as child care and affordable housing are especially important as measures to make labor force participation viable for all Upstate residents. Infrastructure investment will also foster research-intensive educational and health-service activities and will accommodate better communications between these information sectors and prospective high-wage manufacturing firms with spin-off connections to health and education. Infrastructure investment will also facilitate the

development of tourism in Upstate New York, which provides both revenue and visibility for this part of the state.

The first priority area for infrastructure investment should be in “wired” cities. Cities not served by cheap, high capacity fiber-optic networks are ruled out as potential locations for many types of information-intensive activities. The state should take an aggressive role in insuring cheap broadband access for all Upstate metropolitan areas, particularly their cities. Universities, colleges, and major hospitals also have a critical role to play in these investments; they will be both beneficiaries and contributors to the development of new information infrastructure.

Second, the state could and should continue to invest in services that support the labor force, such as child care and affordable housing, to enhance economic security and to foster stable workforce participation.¹⁹ Affordable housing and child care are often hard to find in Upstate’s growing suburban job centers. State economic development policy should be coupled with measures to foster adequate supplies of both housing and child care, perhaps awarding more points in the competition for economic development program support to communities that submit action plans and demonstrate past performance in accommodating this essential social infrastructure.

Third, Upstate would benefit from the upgrading of rail transit to high-speed travel along the Erie Canal/Thruway corridor. The modest distances between many metropolitan areas in New York State make high-speed trains an attractive alternative to flying and driving. Increasing the reliability and frequency of high-speed trains between Upstate and Downstate New York would boost choices and, if pursued strategically in ways that connected rail with airports, could help overcome some of Upstate’s lack of access to low-cost air travel.

Fourth, certain parts of Upstate continue to face high costs and uncertainty in air travel. Low-cost carriers have recently arrived in the medium-sized airports in Buffalo, Rochester, Syracuse, and Albany, greatly reducing costs for passengers who use these airports. But many smaller airports in Upstate—especially those in the Southern Tier and in the rural North Country—face uncertain conditions in the next five years as their carriers restructure and try to maintain their solvency. If a reduction in the number of airports in either of these two regions is necessary to allow continued access to air travel, the reduction should be conducted within a state and federal strategy that will enhance air service for all residents of the Southern Tier and the North Country.

C. Restructure government finance to account for the growing significance of non-profit institutions in the Upstate economy.

Increasingly, Upstate’s economy relies on higher education and health care for both employment and wage growth. These mostly “clean” industries have many advantages for local and regional economies, but they also impose substantial costs, especially on cities, where most hospitals, colleges, and universities are based. These costs are rarely balanced out by sufficient tax resources to meet local revenue needs because most health and higher-education establishments are exempt from local property taxes and because their higher-paid employees often live in suburbs. Although some institutions make payments in lieu of property taxes, the negotiations over such payments are fraught with controversy and probably quite inconsistent through time.

Many sources are creating pressures for fiscal reform in New York State. Disparities among the state’s school districts exceed levels that state courts find acceptable, and all districts have increased spending in response to

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standards-based education. The ongoing state budget crisis, furthermore, has to date been borne largely on the backs of local property taxpayers, who pay significant shares of increasingly expensive state and federal government mandates. And every level—and the majority of units—of government in New York have taken on potentially crippling amounts of debt in the past 10 years.

These combined pressures—economic transformation, higher standards for education, looming increases for health care costs, and rapidly accumulating public debt—together suggest that the state's taxation system requires comprehensive reform. Reform would be eased if New York State captured more than the 85 cents in federal spending for every tax dollar it contributed to the federal treasury in the 2002 fiscal year; meanwhile, higher federal expenditures for infrastructure enhancement, education, and health care would provide substantial benefits for the New York economy.²⁰ But beyond capturing more money, Upstate clearly needs to rely less on local property taxes to fund its government. For that reason, a thorough, systematic readjustment of New York's state-local tax system appears critical to the economic revival and repositioning of Upstate New York.

In the end, then, Upstate's economy has begun to recover from the deep stagnation of the 1990s, but still requires decisive policy initiatives to truly prosper going forward. Stronger connections need to be forged among its knowledge-intensive activities in higher education and health care and the longstanding manufacturing sector. Likewise, an urgent need exists to build the institutional and physical infrastructure to support job creation and growth in both established and newly emerging industries. Such efforts show good prospects of becoming the basis for a more diverse and resilient Upstate economy.

Endnotes

1. Rolf Pendall is an associate professor of city and regional planning at Cornell University. Matthew P. Drennon and Susan Christopherson are both professors in that department.
2. The idea of traded versus non-traded goods and services reflects the economic theory of international trade. Whether a region's financial industry, say, actually sells services beyond the region or whether the region purchases financial services from outside the region is not easily known with published data. But what is important is that such industries may compete for external markets just as they may compete with non-local firms for the local market. The taxonomy of industries employed here was developed by this report's co-author, Matthew P. Drennon, and used in his recent book *The Information Economy and American Cities* (Baltimore: Johns Hopkins University, 2002).
3. Numbers are expressed in constant 2000 dollars.
4. Data for Upstate for this section are derived from a special tabulation of the ES-202 series by the New York Department of Labor. The ES-202 data do not report self-employment or self-employment income. Data for the U.S., by contrast, are derived from the U.S. Bureau of Economic Analysis Regional Economic Information System (REIS), which assigns self-employment activity to economic sectors. Data from REIS for Upstate could not be used for this part of the analysis because data were suppressed in many counties for sectors in which only a few establishments were operating. The ES-202 data typically miss about 20 percent of all employment in Upstate because it does not report self-employment.
5. New York state employment data are from the 5% 2000 PUMS; U.S. totals are from the 2000 Supplementary Survey PUMS. Both extracted by Rolf Pendall, September 2003. The data include both people who work in colleges and those who work in business, technical, and trade schools.
6. New York State Education Department, Office of Higher Education, Office of Research and Information Systems, "Distribution of Full-Time and Part-Time Employees by Racial/Ethnic Category and Gender, New York State, 1995." Online document at www.highered.nysed.gov/oris/icemp_t1.htm. Accessed August 11, 2003.
7. Ibid.
8. New York State Office of the State Comptroller, "New York State's Higher Education Policy Vacuum," September, 1998. Online document available at www.osc.state.us/reports/schools/1998/9-98.htm Accessed August 11, 2003.
9. The net increase in this young cohort indicates that in-migrating families were larger than those that left Upstate in the 1990s.
10. James C. Palmer and Sandra Gililan, "State Higher Education Tax Appropriations for Fiscal Years 2002 and 2003," Table 11, (Normal: Center for the Study of Education Policy, Illinois State University, 2003). See the online document available at www.coe.ilstu.edu/grapevine/FY01_02.pdf.
11. Adults age 25 and over.
12. New York state employment data are from the 5% 2000 PUMS; U.S. totals are from the 2000 Supplementary Survey PUMS. Both extracted by Rolf Pendall, September 2003.
13. Source: New York State Department of Health.
14. Sectoral earnings are computed based on data from ES-202 from the New York State Department of Labor. These data do not cover self-employed workers and workers in railroads, who are not covered by unemployment insurance.
15. Barry Hirsch and David A. Macpherson, *Union Membership and Earnings Data Book: Compilations from the Current Population Survey*, 1999 edition (Washington: Bureau of National Affairs, 1999).
16. See Rolf Pendall, "Upstate New York's Population Plateau" (Washington: Brookings Institution, 2003).
17. The Rochester region does have a significant concentration of firms specializing in photonics, optics, and imaging as well as in data capture and processing. Together, suppliers and contractors of the major firms and a substantial number of firms oriented toward export outside the region create the basis for a major high technology cluster in the Rochester region. Photonics serves a diverse array of industries. The health industry, the public sector, the defense industry, the retail industry, and even the motion picture industry are all customers for new photonics applications and products. A survey of photonics firms by Susan Christopherson of Cornell University's Department of City and Regional Planning indicates that the industry is "home-grown." The photonics firms located in the Rochester region indicate that their primary reason for being located in the region is that they were established there originally. While many firms have stayed in the region because they were founded in Rochester, more than half of the firms also cite additional factors for staying in the region. Universities with specialized optics and imaging programs were highly ranked, as was the presence of other firms in the same industry. Perhaps surprisingly, the quality of the labor supply was the second highest ranked element in the survey. When the firms were asked what resources they thought could improve their industry's regional competitiveness, the highest ranked answer was medium-skilled labor.

18. Terry F. Buss, "The Effect of State Tax Incentives on Economic Growth and Firm Location Decisions: An Overview of the Literature," *Economic Development Quarterly* 15 (1): 90–105.
19. See especially Cornell University Department of City and Regional Planning, "Economic Analysis of the Early Care and Education Sector in New York State". Available at www.cce.cornell.edu/restructuring/doc/pdf/Final_Technical_NYS_Report.pdf, and Mildred Warner, Rosaria Ribeiro, and Amy Erica Smith, "Addressing the Affordability Gap: Framing Child Care as Economic Development" (*Journal of Affordable Housing* 12 (3), 2003: 294-313). Available at www.cce.cornell.edu/restructuring/doc/pdf/Addressing%20the%20Affordability%20Gap.pdf.
20. J. Scott Moody, "Federal Tax Burdens and Expenditures by State: Which States Gain Most from Federal Fiscal Operations?" (Tax Foundation report number 124, July 2003). Available online at www.taxfoundation.org/sr124.pdf.

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