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SECOND DISTRICT HIGHLIGHTS



Challenges Facing the New York Metropolitan Area Economy

James Orr and Giorgio Topa

The skilled and well-educated workforce of the New York metropolitan area has played a large role in enabling the region to withstand adverse economic shocks and adapt successfully to a services economy. A further expansion of this “human capital” will enable the metro area to meet the challenges ahead: attracting new firms, maintaining immigration flows, and competing successfully with fast-growing metro areas in other parts of the country.

Over the past several decades, the New York metropolitan area economy has proved to be both adaptable and resilient. During this time, it has successfully managed the transition from a manufacturing-intensive employment base to one increasingly dominated by services. And it has accommodated this shift to the services industries in such a way that the level of employment has expanded. Further, it has survived a major economic shock—the September 11 attacks—with seemingly little permanent damage to the earnings advantage long enjoyed by its workers.

Despite this adaptability to change, New York faces a number of challenges that could adversely affect its prospects for growth. These challenges include maintaining immigration flows and meeting the needs of lower skilled immigrants, attracting firms despite the high cost of doing business, and coping with competition from other parts of the country.

In this issue of *Second District Highlights*, we take a closer look at the metro area economy’s adjustment to change in recent decades and the challenges that confront New York now. We suggest that a rise in the skill and education levels of the metro area workforce has contributed

significantly to the resilience of the economy to date, and that an ongoing expansion of this “human capital” is necessary to cope with the challenges ahead. To illustrate our argument, we consider how two industries that depend heavily on highly trained workers—finance and biotechnology—are faring in New York. While both industries have a strong presence in the metro area, their continued growth is not assured. Indeed, New York faces significant competition from other parts of the country as it seeks to retain existing, and attract new, firms in these fields.

Evolution of the New York Metropolitan Area Economy

To understand how the metro area economy has evolved, we look first at broad population and employment trends. The population of New York City rose steadily during the first half of the twentieth century, but since 1950 it has hovered near 8 million residents. In 2000, according to Census Bureau data, the city’s population reached a high of 8.1 million. In contrast, the population of the surrounding metropolitan area has been characterized by strong growth over the past four decades. Led by these gains in the counties outside New York City, the overall population of the New York metropolitan area climbed from approximately 15 million in 1950 to almost 22 million in 2000.¹

Employment trends within the New York metropolitan area have followed a similar “split” pattern, with New York City and New Jersey exhibiting different job growth trends. Since 1960, aggregate payroll employment in New York City has been relatively stable at about 4 million jobs, roughly in line with the city’s flat average population level during this period. In fact, in 2000, the overall level of employment in the city was virtually identical to the level of employment in 1960. Over this same period, however, the total number of jobs in New Jersey doubled—an employment growth rate below that of the nation but above that of a number of other states in the Northeast.

Despite these differences in population and employment growth, both New York City and New Jersey have experienced a dramatic shift in the industrial composition of jobs away from manufacturing and toward services.² Manufacturing’s share of total employment in New York City fell from 27 percent in 1960 to 7 percent in 2000, roughly matched by an increase in the services sector’s share of total employment (Chart 1). The shift has been attributed to a variety of factors, most notably the relatively high operating costs in the area and the long-term movement of population centers away from the northeastern United States.³ In New Jersey, the change in employment composition was even more extreme than in either New York City or the nation, with manufacturing’s share of employment falling from 40 percent in 1960 to about 12 percent in 2000. Unlike the city, New Jersey experienced this change in the composition of jobs during an ongoing expansion in total employment; like the city, New Jersey saw the declining share of manufacturing employment offset by a roughly equivalent rise in the share of services jobs.

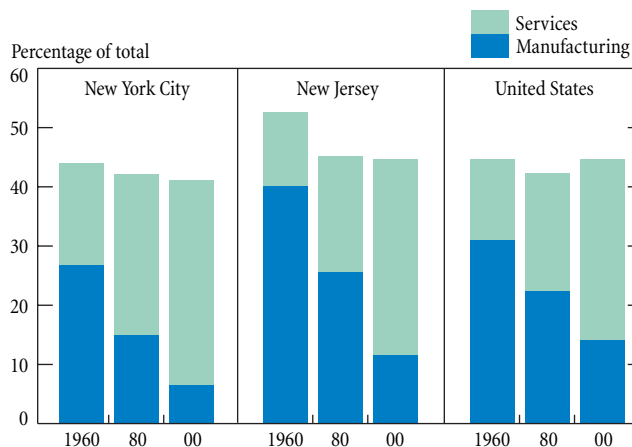
Closely associated with this shift in the industrial composition of employment was a rise in the average skill level of workers. This rise was most evident in New York City, where the average wage of workers was more than 60 percent above the average wage of workers nationwide in 2003, up from a 20 percent differential in 1980 (Chart 2). The rise in the relative wage of workers in the city, together with a roughly constant overall level of employment, implies some combination of relatively higher productivity growth for workers in existing jobs and a shift toward higher paying occupations. Thus, it

¹In this discussion of population trends, the New York metropolitan area is defined as the five counties of New York City; Fairfield, Litchfield, and New Haven counties in Connecticut; Nassau, Suffolk, Rockland, Westchester, Dutchess, Orange, Putnam, Sullivan, and Ulster counties in New York; and Bergen, Essex, Passaic, Hudson, Middlesex, Morris, Somerset, Union, Hunterdon, Mercer, Monmouth, Ocean, Sussex, and Warren counties in New Jersey.

²Services here are defined as the services industries in Standard Industrial Classification (SIC) categories 70 through 89.

³See Crandall (1993) and Bram and Anderson (2001).

Chart 1
Manufacturing and Services Sector Shares of Employment
in New York City, New Jersey, and the Nation



Sources: U.S. Bureau of Labor Statistics; New York State Department of Labor; New Jersey Department of Labor.

Notes: The services sector comprises the industries in the SIC categories 70 through 89. Data for New Jersey cover the entire state.

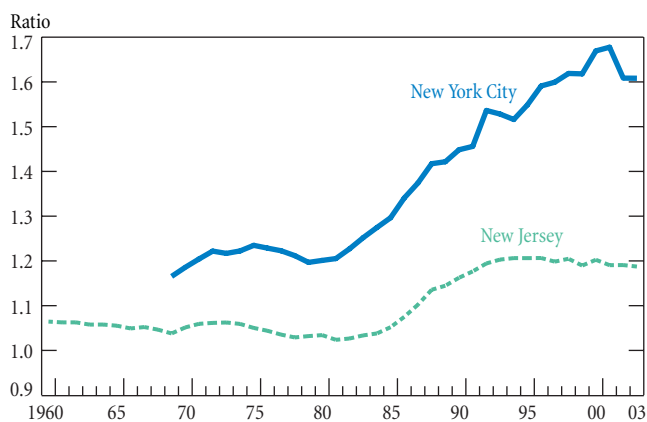
appears that the city has been able to adapt its employment base in spite of the substantial declines in manufacturing employment. Moreover, the lack of any substantial and sustained decline in relative wages in 2002 and 2003 suggests that even a major economic shock—the September 11 attacks—may not have permanently damaged the city’s earnings advantage.⁴ A similar increase in relative earnings is evident in New Jersey, although relative earnings have not risen to the same extent as in the city.

The New York metro area’s ability to maintain its growth fundamentals—through those economic advantages and prudent policy choices that have aided the ongoing transformation of the economy—will help determine its long-term growth prospects. One way of assessing an area’s prospects is to see whether its industry mix is favorable for growth, that is, if the industries that have located in the area are expected to grow. To gauge the prospects of the current industry mix, we conducted an exercise for New York City in which we compared ten-year employment growth projections (2002 to 2012) for various U.S. industries with the relative concentration of these industries in the city (Chart 3).⁵ Relative concentration is measured by a location quotient—an industry’s share of employment in New York City divided by its national share. As this exercise suggests,

⁴For a fuller discussion of the impact of the September 11 attacks on New York City’s long-term growth prospects, see Bram, Haughwout, and Orr (2002).

⁵The industry employment growth projections are taken from U.S. Bureau of Labor Statistics (2004).

Chart 2
Average Earnings per Employee: New York City and New Jersey
Relative to the United States

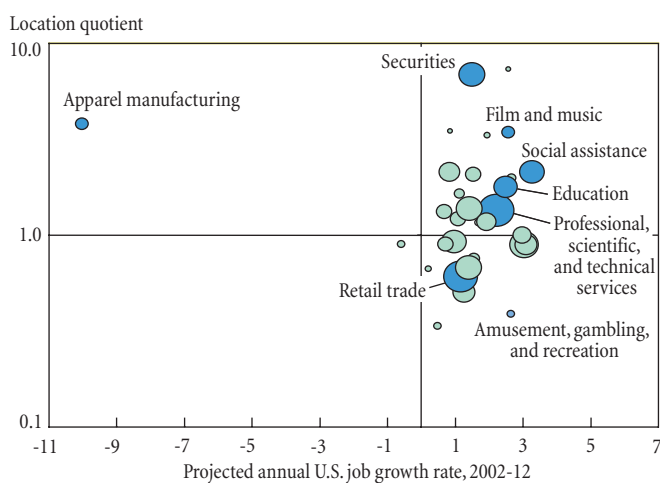


Sources: U.S. Bureau of Economic Analysis; U.S. Bureau of Labor Statistics; New York State Department of Labor; New Jersey Department of Labor.

Note: Data for New Jersey cover the entire state.

many of the city’s key industries—securities, education, and professional, scientific, and technical services—are characterized by a combination of a relatively high location quotient and a relatively high projected national job growth rate. Thus, the city’s industry mix should contribute positively to growth going forward.

Chart 3
New York City Industry Concentration and Projected Growth
of Industry Employment



Sources: U.S. Bureau of Labor Statistics; New York State Department of Labor.

Notes: Industry concentration is measured by a location quotient, calculated as the ratio of an industry’s share of employment in New York City to its share of employment nationwide. The size of the bubble representing a given industry reflects that industry’s share of New York City employment.

Key Challenges to Metropolitan Area Job Growth

Although the city’s job growth prospects appear favorable, its ability to keep up with the nation’s projected growth rate cannot be taken for granted. In the past, job growth rates in many of the area’s industries have fallen short of national growth rates. Thus, the challenge for policymakers is to help ensure that the area remains an attractive environment for industries primed for expansion. A key means of achieving this goal, the research literature suggests, is through a high concentration of human capital—that is, a skilled and highly educated workforce.

The presence of such a workforce has been shown to be essential in maintaining sustained growth in a metropolitan area. Among metropolitan statistical areas (MSAs), for example, the correlation between population growth from 1970 to 2000 and the share of adults with college degrees in 1970 is 0.30. Further, in metropolitan areas where more than 25 percent of adults had college degrees, the average population growth rate between 1980 and 2000 was 45 percent. In contrast, in metropolitan areas where less than 10 percent of adults were college graduates in 1980, population grew on average by only 13 percent.⁶

Glaeser and Saiz (2003) argue that human capital encourages economic growth in cities through various channels. First, through its consumption value: highly skilled neighbors are valued as an amenity because they raise property values and induce similarly skilled individuals to locate nearby. In addition, highly educated individuals attract other amenities—for example, theaters, concert halls, and museums—to a metropolitan area, further enhancing the desirability of that location.

Second, growth is directly related to the production value of human capital. It has long been argued (starting with Jane Jacobs) that human capital facilitates the flow of ideas and enhances the productivity gains that arise from the geographic concentration of producers and consumers; this process in turn induces further growth. These gains are transmitted both among firms within a given industry and across industries, through a sort of cross-fertilization process.

Third, and perhaps most important, a high concentration of human capital enables a city to absorb negative shocks more easily and to “reinvent” itself at times of structural change. Long-run urban success is not defined as linear growth at a steady pace, but rather as the ability to respond successfully to challenges. At any given point in time, a city’s growth hinges on a few critical industries (for example, the financial sector today). Inevitably, however, such areas of specialization decline or are challenged by competitors.

⁶See Glaeser and Saiz (2003)

Table 1
Educational Attainment in the Ten Largest Metropolitan Areas

Metropolitan Statistical Area	Percentage of Population Aged 25 to 64				Percentage of Workforce	
	At Least High School ^a		At Least College ^b		At Least College ^b	
	1980	2000	1980	2000	2000	2000
Atlanta	75.2	89.7	23.9	34.0	47.0	42.1
Chicago	73.7	87.5	20.7	33.0	48.7	50.1
Dallas–Fort Worth	75.0	84.2	22.0	32.2	41.5	47.8
Detroit	73.5	90.0	15.7	25.2	34.5	39.3
Miami	77.8	89.8	17.0	27.5	34.8	40.3
Houston	74.0	81.7	24.0	28.0	41.4	39.5
Los Angeles	73.9	76.5	20.2	26.1	42.0	33.7
New York	70.0	83.3	21.9	32.0	54.9	44.5
Philadelphia	73.2	90.8	19.1	31.1	43.5	58.1
Washington, D.C.	83.9	91.6	35.5	44.6	54.7	61.7

Source: Minnesota Population Center, University of Minnesota, Integrated Public Use Microdata Series.

Note: For the definition of the metropolitan areas in the table, see <<http://www.ipums.org/usa/hgeographic/metareadb.html>>.

^aPossessing at least a high school diploma.

^bPossessing at least a college degree.

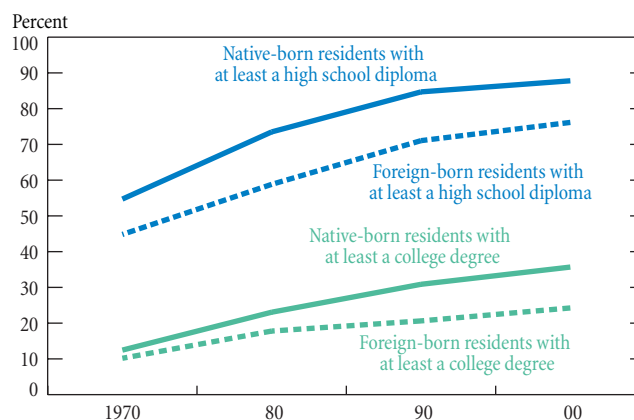
Thus, a high concentration of human capital is especially critical at times of transition because it provides the flexibility and skills that enable the city to reorient itself toward new enterprises.

The New York metropolitan region will need to continue developing ways of attracting, retaining, and producing highly educated workers if it is to adapt to economic changes and continue its past success as an urban area. In 2000, New York ranked fifth among the ten largest metropolitan areas in the United States in percentage of the population with at least a college degree—ahead of large urban centers like Houston and Los Angeles, but behind the Washington, D.C., metropolitan area, Atlanta, Chicago, and Dallas–Fort Worth (Table 1, columns 3 and 4). Thus, the competition from other large and growing urban centers is intense, and maintaining an edge is by no means an easy task.

Another challenge will be to maintain immigration flows at their current high levels. Immigrants bring fresh ideas and provide a constant stream of innovations. They also play a major role in sustaining population growth.

In 2000, 2.9 million of the 8.1 million residents of New York City were foreign born. More important, in that year a higher proportion of the city's population—more than 36 percent—was foreign born than at any time since the 1920s. The history of immigration in the twentieth century has been characterized by ebbs and flows: the fraction of immigrants in the city reached a peak around 1910 at roughly 40 percent, steadily declined until the 1970s, and

Chart 4
Educational Attainment of Native- and Foreign-Born Residents Aged 25 to 64: New York Metropolitan Area



Source: Minnesota Population Center, University of Minnesota, Integrated Public Use Microdata Series.

Note: For the definition of the New York metropolitan area used in the chart, see <<http://www.ipums.org/usa/hgeographic/metareadb.html>>.

then started rising again at a brisk pace. The same pattern is evident in the larger metropolitan region. With respect to countries of origin, immigration flows into the New York metropolitan region are very diverse—no single group constitutes more than roughly 10 percent of the population. This diversity in itself contributes to the influx of new ideas.

Nevertheless, while immigration flows are critical to both population and economic growth, they can also create their own challenges. Recent immigrants to the New York metro area are better educated than their predecessors, but the fraction of immigrants with at least a high school diploma, like the fraction with at least a college degree, still lags behind the corresponding fraction in the native population (Chart 4).⁷ Thus, one task for policymakers will be to meet the education and training needs of the less-skilled immigrants already resident in the area.

A second task will be to continue improving the area's attractiveness to high-skilled immigrants. Individuals and households, like businesses, decide where to locate on the basis of the relative advantages of alternative locations. In the case of new immigrants, this choice of a destination is subject to “network” effects: If a specific location is perceived as a less favorable environment than others, a sudden and large shift of immigration flows away from that location could occur. Given this potential for losses to multiply, much is at stake for the New York metro area in competing successfully for skilled immigrant workers.

⁷For a discussion of the characteristics of recent immigrants to New York City, see Rosen, Wieler, and Pereira (2005).

Competitor Cities

Metropolitan areas are in ongoing competition to attract firms, both successful old-line businesses and new and expanding firms. The New York metropolitan area is at a disadvantage as a location for some types of activities because of its relatively high cost of doing business.⁸ For other activities, however, the area's relatively high costs are offset by its relatively strong productivity, demonstrated by its high human capital and relative wages.

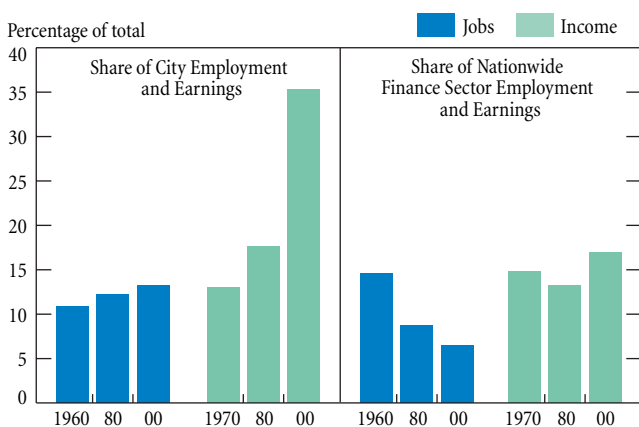
Policymakers will want to stay attuned to the competitive pressures from other locations as they seek to maintain an attractive environment that will encourage firms to take advantage of the area's productivity. The nature of the competition to attract firms to the area is illustrated here with two examples: the financial services industry in New York City, one of the city's core strengths and an engine of growth in the economy; and the biotechnology industry in New York and New Jersey, one of several newer industries with a presence in the area and potential for further growth and development. Our discussion of each example highlights the nature of the competition for firms in these industries and the key role that human capital plays in that competition.

Finance Industry

The financial services sector, which includes finance, insurance, and real estate firms, is important to New York City not only as a source of jobs but also, increasingly, as a source of earnings (Chart 5). In fact, the share of total city earnings accounted for by the sector in 2000—more than 35 percent—was almost triple its 1970 share. However, one of the key features of New York City's financial sector is its declining share of nationwide finance employment—at 6.5 percent in 2000, this share was less than half its size in 1960.

Chart 5

The Importance of New York City's Finance Sector



Sources: U.S. Bureau of Economic Analysis; U.S. Bureau of Labor Statistics; New York State Department of Labor.

Note: Income data are only available from 1970.

Part of the decline in New York City's share of finance jobs nationwide reflects the ongoing relocation of back-office jobs to lower-cost locations within the metropolitan area. But there is also broader-based competition for financial services jobs among the nation's metropolitan areas. However, no single area appears to be significantly increasing its share of nationwide financial services employment at the expense of New York City. In fact, the two cities with the largest concentrations of financial sector employment outside of the New York City area—Chicago (4.1 percent) and Los Angeles (3.1 percent)—also experienced a decline in their share of nationwide financial employment between 1980 and 2000. More generally, the biggest gainers in terms of employment share were several relatively fast-growing, lower-cost areas in the southwestern United States, including Dallas, Phoenix, and San Antonio.

While the area's declining share of nationwide financial sector jobs might be viewed as a sharp reduction in New York City's competitiveness, the city's share of nationwide finance sector earnings presents a more encouraging picture. Substantially higher than the city's share of employment, this earnings share reached 17 percent in 2000, up from 15 percent in 1970. Although finance sector employment in New York City is roughly one and one-half times that of Chicago and twice that of Los Angeles, the income generated by the city's finance sector is substantially larger than these employment ratios suggest—three times that of Chicago and more than four times that of Los Angeles. Thus, the city has retained and expanded the higher-paying, relatively sophisticated activities in the sector even as it has shed relatively lower-paying jobs.

A comparison of the educational makeup of the finance workforce in New York and other major metropolitan areas suggests the higher-value-added nature of jobs in New York's finance sector. Almost 55 percent of workers in the metro area's finance sector have a bachelor's degree or higher, a figure matched only by the finance workforce in the Washington, D.C., metropolitan area (Table 1, column 5). By contrast, 49 percent of the finance workforce in Chicago and 42 percent of the finance workforce in Los Angeles have a bachelor's degree or higher.

While it may be difficult to challenge New York City's finance sector as a location for sophisticated financial sector activities, the city cannot presume to be able to withstand any and all challenges. Sharply rising costs in the city would increase the desirability of relocating to other U.S. cities. Moreover, competitive pressures might come from abroad. London, for example, might pose a future challenge because it also hosts many large financial firms that conduct relatively

⁸Indexes of the cost of doing business in metropolitan areas throughout the United States are available from Economy.com (2005).

sophisticated activities on a global basis, as well as an array of financial service providers, exchanges, institutions, and supporting services.⁹ Further, advances in information and communications technology in the industry could affect the number and types of jobs in the city over the longer term. On the one hand, new technology could expand the scope of activity and thus be a potential source of job growth in the city, particularly in the development of relatively sophisticated financial products. On the other hand, electronic trading, which has not yet had a vast negative effect on jobs and activity in New York City, might over time build volume and reduce employment at existing exchanges.

Biotechnology Industry

Biotechnology—the use of biological processes or techniques in the development of agricultural, industrial, and pharmaceutical products—is a relatively young industry. It was created in 1973, when researchers at Stanford University and the University of California at San Francisco filed several patents. These patents were then licensed to start-up firms to encourage the commercial use of academic research. Many biotech firms were originally formed in clusters around research universities or government laboratories.

In 2001, there were roughly 1,500 biotech firms in the country.¹⁰ Two-thirds of the industry was concentrated in eight states; New Jersey ranked fifth in the country, while New York ranked seventh. One-third of the industry was concentrated in five metropolitan areas: Boston, San Diego, San Francisco, Washington, D.C., and Raleigh-Durham (Table 2, reproduced from Feldman [2003]). The degree of concentration has been growing over time. For instance, three states accounted for 38 percent of the industry in 1991, 40 percent in 1997, and 42 percent in 2001. This geographic concentration is indicative of the presence of agglomeration economies and local intellectual spillovers. That is, firms benefit from the circulation of ideas and industry-specific know-how that arises when other firms in the same advanced technological niche are located nearby.

The existing empirical literature on the biotech industry also suggests that so-called anchor firms may be crucial to developing and sustaining clusters of biotech firms. Anchor firms are established firms that offer product lines predating the biotechnology revolution as well as newer products based on biotechnologies. Many anchor firms, for example, are pharmaceutical companies. Research universities and laboratories appear to be necessary but not sufficient for the sustained growth of biotech clusters, whereas anchor firms are a sufficient condition for such clusters.

⁹See Orr and Rosen (2000).

¹⁰See Feldman (2003).

Table 2

Distribution of Biotechnology Firms by Metropolitan Area

Geographic Entity	State	1997		2001	
		Number of Firms	Share (Percent)	Number of Firms	Share (Percent)
Boston PMSA	MA	142	9.6	142	9.5
San Diego MSA	CA	107	7.2	109	7.3
San Francisco PMSA	CA	76	5.1	70	4.7
Washington, D.C. PMSA	MD/DC/VA	74	5.0	77	5.1
Raleigh-Durham MSA	NC	69	4.7	88	5.9
Philadelphia PMSA	PA/NJ	56	3.8	47	3.1
San Jose PMSA	CA	53	3.6	50	3.3
New York PMSA– Middlesex-Somerset MSA	NY/NJ	51	3.5	57	3.8
Seattle-Bellevue PMSA	WA	45	3.0	42	2.8
Oakland PMSA	CA	44	3.0	55	3.7
Minneapolis-St. Paul	MN	31	2.1	27	1.8
Orange County	CA	30	2.0	28	1.9
Houston PMSA	TX	29	2.0	23	1.5
Madison MSA	WI	28	1.9	24	1.6
Chicago PMSA	IL	25	1.7	29	1.9
Baltimore PMSA	MD	22	1.5	25	1.7

Source: Feldman (2003). Data for the New York PMSA and the Middlesex–Somerset MSA have been combined by the authors.

Note: PMSA denotes primary metropolitan statistical area; MSA denotes metropolitan statistical area.

While the New York metropolitan region is not among the top five metro areas for the biotech industry, its share of the industry has grown in recent years. In 2001, the New York Primary Metropolitan Statistical Area (PMSA) and New Jersey's Middlesex-Somerset MSA moved into sixth place in the country for the presence of biotech firms, up from an eighth-place ranking in 1997 (Table 2). Furthermore, the New York metropolitan region has a number of the features that are thought to draw biotech firms. Specifically, the region has both an established presence in the pharmaceutical industry, which can provide an anchor for biotech clusters and large hospitals, and medical centers, which can provide the capability for research and clinical trials. Finally, the presence of a strong financial sector is beneficial for the establishment of start-up firms.

However, the New York metropolitan area also faces some challenges. Stiff competition comes from other metropolitan areas such as Boston, San Diego, and San Francisco, with their concentration of research universities and specialized, skilled labor; from Raleigh-Durham, because of its association with Research Triangle Park; and from Washington D.C., which benefits from its proximity to the U.S. National Institutes of Health. Further, while the New York metropolitan area ranks first among the ten largest U.S. metropolitan areas in share of highly educated workers in finance, it ranks only fifth in the biotech industry (Table 1, column 6). Finally,

the recent stem-cell initiative in California¹¹ could draw highly skilled, specialized researchers and technicians away from the Northeast and other parts of the country.¹²

Such competition can be especially challenging for the New York metropolitan area because it is not currently one of the leaders in biotech endeavors. As we have seen, biotech firms benefit from proximity to other firms that specialize in the same processes. Thus, those metropolitan areas that already have a large concentration of biotech firms will have an advantage over other metro areas in attracting new firms. Indeed, the established centers of the biotech industry could induce a whole cluster of firms to move to that location, thus eliminating the possibility that such a cluster might act as an “engine of growth” for the New York metropolitan region.

Conclusion

The New York metropolitan area faces a number of pressures that could constrain its future growth and development. It faces ongoing competition from other metro areas as a prime location for jobs and economic activity. To sustain population growth, it must provide an environment that will attract new residents, both from within the United States and from abroad. To draw new firms—particularly in fast-growing fields such as biotechnology—it must offset the disadvantages posed by the high cost of doing business.

One key means of meeting these challenges will be a continued expansion of the area’s human capital. In the past, New York’s skilled, highly educated workforce has been essential to maintaining the city’s ability to absorb negative

shocks and to reinvent itself at times of structural change. The task for policymakers now is to find ways to boost the skills of the current workforce and to attract new workers with superior education and training.

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¹¹In November 2004, California passed a controversial bond measure that devotes \$3 billion to human embryonic stem-cell experiments. Currently, this initiative is by far the largest stem-cell project in the United States, whether privately or publicly financed.

¹²It should be noted that New York and New Jersey are considering their own statewide stem-cell initiatives.

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