IBO

New York City Independent Budget Office

Background Paper

August 2004

Supply & Demand: City and State May Be Planning Too Much Office Space

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An Analysis of The Plan for Financing Hudson Yards

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SUMMARY

MAJOR OFFICE DEVELOPMENT is planned for the World Trade Center site, Hudson Yards on the West Side of Manhattan, and Downtown Brooklyn. These plans, which together would allow 42.5 million square feet of office space by 2035, are motivated by recent memories of a shortage of up-to-date space in New York City and a concern that this shortage contributed to job losses to New Jersey and elsewhere. But IBO projections of future office space needs suggest that city and state plans for the three major sites may allow more office space than needed. That could lead developers to choose not to build at these sites or to build at a slower pace than assumed in the plans.

Roughly one out of three jobs in the city is now an office job, as compared to slightly more than one out of four in 1975. To project future office job growth, IBO measured the growth rate between the 1969 and 2000 employment peaks. IBO's growth rate estimates range from 0.37 percent to 0.76 percent annually. The range reflects alternative measurement assumptions.

Applying these growth rate estimates, IBO finds:

- Assuming that city office employment regains its 2000 peak level by 2010, subsequent growth at our midrange estimate of 0.6 percent per year would result in a gain of 203,700 office jobs between 2010 and 2035. Annual growth of 0.4 percent would produce a gain of 132,500 office jobs, while 0.8 percent growth would produce a gain of 278,300 office jobs.
- Our midrange estimate for office employment growth translates into a need for 49.8 million square feet of office space by 2035, assuming each job requires 225 square feet and the office vacancy rate is 8 percent. Alternative assumptions on growth rates and space per job yield estimates as high as 75.7 million square feet and as low as 28.8 million square feet.
- Although the amount of office space allowed in the three major project areas compares favorably with our midrange estimate for space needed by 2035, these are not the only sites where development may occur. Manhattan has the potential for as much as 13 million square feet of office space at other locations. The other boroughs also offer opportunity.

Comparison of IBO projections for planned and potential office space with projections for likely office space needs over the next three decades, although inevitably more uncertain over the long term, suggests that the city's planned space may exceed what the market will need.

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MEASURING OFFICE EMPLOYMENT

In anticipation of a rising demand for office space, city and state officials are planning major office development projects in several parts of New York City—the World Trade Center site, Hudson Yards on the West Side of Manhattan, and Downtown Brooklyn. If fully realized, these projects would create 42.5 million square feet of new office space—roughly equal to all the office space in Houston—over the next three decades.

Given the three-decade horizon for the office development plans, IBO sought to estimate a long-term peak-to-peak trend employment growth rate. However, measuring the history of office employment is complicated by two factors. First, there is no official or even widely accepted definition of "office employment." Second, when constructing a time series for office employment from industry-level data from the Bureau of Labor Statistics (BLS), one must deal with changes in industry classifications over time and missing data. The old system for categorizing industries, the Standard Industries Classification (SIC), was changed periodically. Consequently, several industry-level series that seem appropriate for an office employment classification go back only to 1975, and other industry-level series must be combined to get that far back. The SIC data are also available only through the year 2000. Data for subsequent years are classified under the new North American Industry Classification System (NAICS). Although this new system is superior to the SIC in terms of its coverage of today's industries, official NAICS data go back only to 1990.[1]

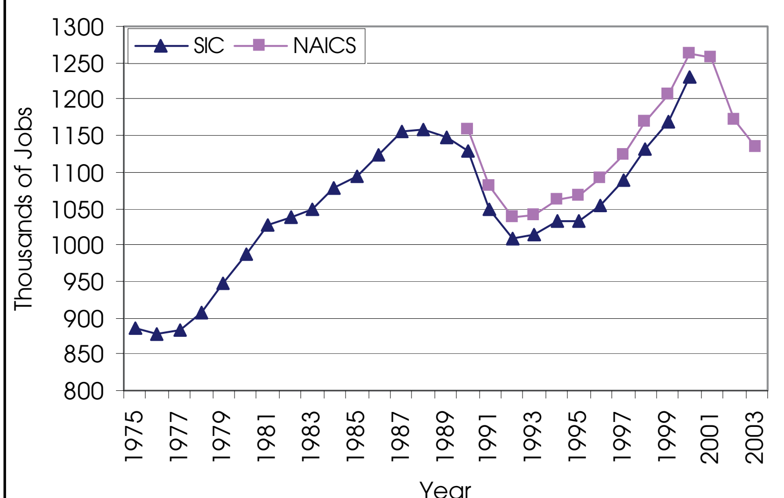
We work with both SIC and NAICS data in our analysis. Under the SIC, we define office employment as including publishing; communications; finance, insurance and real estate (FIRE); legal services; business services; membership organizations; engineering and management services not elsewhere classified. Under NAICS, we define office employment as including information, financial activities, and professional and business services.

Three major industries with growing employment—health care, education, and social services—are excluded from our definition of office employment because the vast majority of office jobs in these industries are not performed in office buildings. In health care, most jobs are still performed in hospital settings and a growing number of jobs in ambulatory health care are performed in patients' homes. Jobs in physicians' offices located in office buildings, rather than hospitals, are not identified separately. Most office jobs in education and social services also are performed in their institutional settings.

We also exclude government office jobs. Looking to the future, we do not expect growth in this category. As for the past, we suspect that the growing use of private contractors by government may produce some of the observed growth in office employment in the private sector, but make no adjustment for this.

Data available for 1990 to 2000 allow comparison of the two office employment series constructed under the two classification systems. The SIC employment level is about 3 percent lower than the NAICS employment level (32,700 jobs).[2] Fortunately, given our purpose, the two series move together closely during the 1990-2000 period. The gap between the employment growth rates is consistently small each year and zero on average, and trend annual growth rates are extremely close—0.87 percent with NAICS and 0.85 percent with the SIC. The correlation coefficients between the two employment levels and between the two employment growth rates each exceed 0.99.

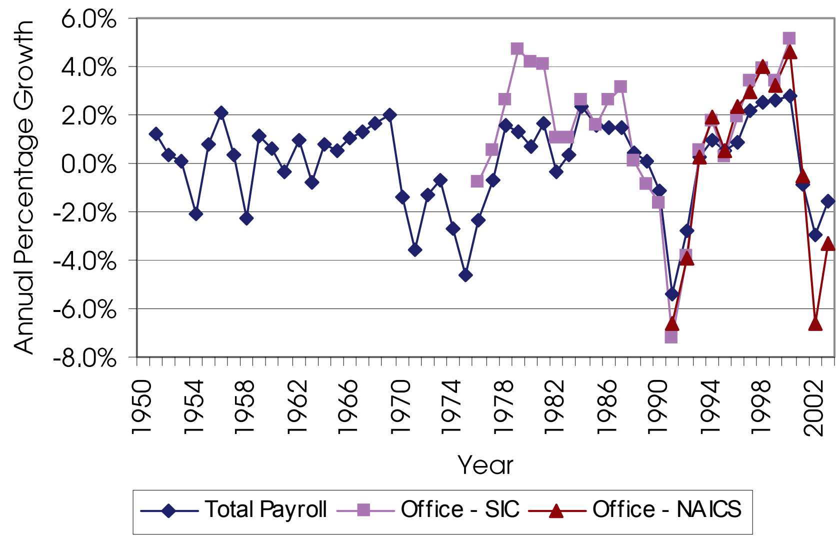
Office Employment in New York City



SOURCE: IBO based on Bureau of Labor Statistics data.

The missing data for the period before 1975 complicate our effort to estimate a long-term peak-to-peak trend employment growth rate. We know office employment peaked in 1988 and 2000, and we suspect it also peaked in 1969. Evidence consistent with a 1969 peak includes a peak in total payroll employment in New York City in 1969, followed by a sharp decline between 1969 and 1975, and a high correlation between office employment and total employment in subsequent years (correlation coefficient 0.95). FIRE employment (which is observed during this period and represented 47.5 percent of office employment in 1975) also dropped by 9.5 percent between 1969 and 1975. Finally, office employment itself declined between 1975 and 1976, the first two years we observe it fully. Given this evidence, it seems reasonable to assume that office employment also declined between 1969 and 1975. We use alternative assumptions about the size of this decline in our analysis below.

Total Employment and Office Employment Growth in New York City



SOURCE: IBO based on Bureau of Labor Statistics data.

RECENT HISTORY OF OFFICE EMPLOYMENT

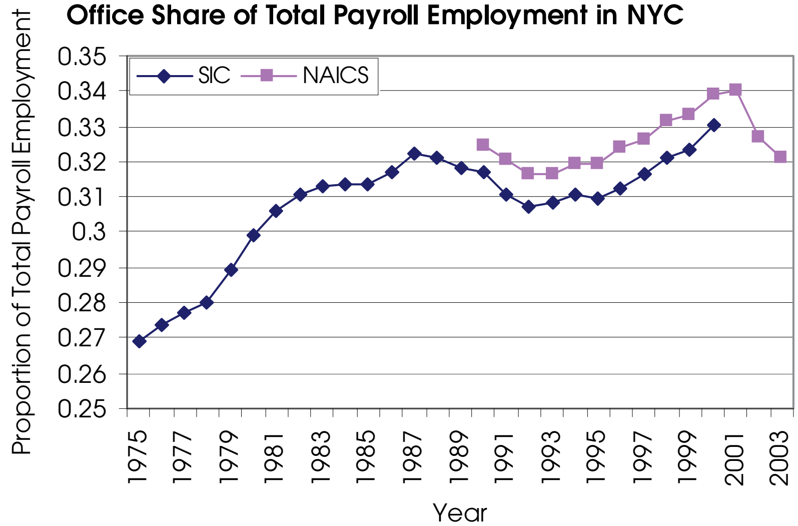
Office employment has been trending upward in New York City since 1975—absolutely and as a percentage of total employment. In 1975, office jobs represented 26.9 percent of all jobs in the city. By 2000, 33 percent of all jobs were office jobs.

Office employment growth was particularly strong between 1996 and 2000—the growth rate averaged 3.6 percent using SIC data and 3.4 percent using NAICS data. In 2000 alone, the number of office jobs grew by 5.1 percent according to the SIC data and 4.6 percent according to NAICS data. Office employment peaked that year at 1.23 million using the SIC classification and 1.26 million using the NAICS classification.

Over the long term, however, the climb has not been entirely uphill. Although the city gained 280,000 office jobs between 1976 and 1988 and 222,000 jobs between 1992 and 2000, these gains sandwiched a loss of 150,000 office jobs between 1988 and 1992. September 11 and the local recession that began in 2001 have taken another major toll. The average office employment level for 2003 was 1.13 million—down 128,800 from its 2000 peak.

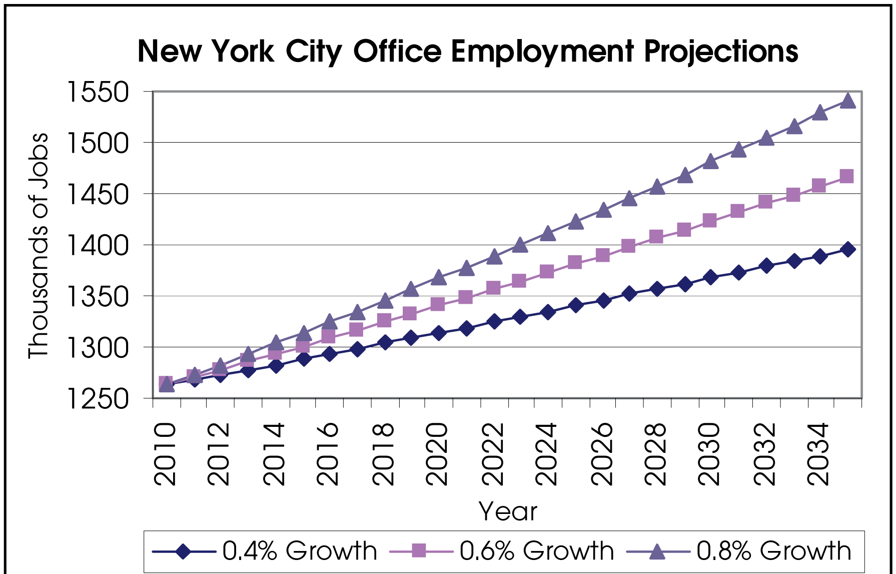
Estimates of trend growth for office employment are very sensitive to the choice of measurement period. While growth rate estimates for 1990 through 2000 are 0.85 percent (SIC) and 0.87 percent (NAICS), adding 2001 produces an estimate of 0.74 percent (NAICS), and moving back to 1990 through 1999 yields estimates of 0.39 percent (SIC) and 0.46 percent (NAICS). For the 1988-2000 peak-to-peak period, the estimated trend growth rate is 0.5 percent.

Office Share of Total Payroll Employment in NYC



SOURCE: IBO based on Bureau of Labor Statistics data.

Estimates of a long-term peak-to-peak growth rate for office employment depend critically on assumptions made for the period 1969 through 1974. As noted, data available for total employment and FIRE employment show that these series fell during this period, but other office employment data are missing before 1975. If we assume that the office share of total employment grew during this period by an average of 0.82 percent per year, which was the trend growth rate for the office share between 1975 and 2000, the estimated annual growth rate for 1969-2000 is 0.76 percent. Assuming that the office share of total employment declined during this period by 1.16 percent per year, as in the 1989-1992 recession, the annual growth rate for 1969-2000 is 0.37 percent. Assuming that the office share of total employment remained fixed



SOURCE: IBO.

during 1969-1974, the annual growth rate for 1969-2000 is 0.6 percent.

OFFICE EMPLOYMENT IN THE FUTURE

Looking to the future, it is useful to think about office employment growth in two parts: a return to our previous peak level and long-term trend growth thereafter.

Return to 2000 Peak: IBO's baseline economic forecast suggests that the city's office employment should regain its 2000 average level of 1.26 million by about 2010. Using the average office employment level of 2003 (1.13 million) as a starting point, this will require an annual growth rate of 1.55 percent, which translates into an average gain of about 18,400 office jobs per year.

Peak-to-Peak Growth after 2010: Office employment projections under three alternative assumptions for annual growth rates—0.4 percent, 0.6 percent and 0.8 percent—are shown in the chart of employment projections through 2035, starting from the 2000 peak level of 1.26 million jobs in the year 2010. Annual growth of 0.8 percent would add a total of about 278,300 office jobs between 2010 and 2035, while growth of 0.6 percent would add about 203,700 office jobs, and growth of 0.4 percent would add about 132,500 office jobs.

OFFICE SPACE NEEDS NOW AND IN THE FUTURE

At present, New York City has a surplus of office space. As of the fourth quarter of 2003, 28.2 million square feet of Class A office space sat vacant in Manhattan alone, according to Cushman and Wakefield. Across all classes, there were 48.6 million square feet of office space vacant in Manhattan, and the vacancy rate was 12.5 percent.[3] Although some Class A space could be downgraded and some Class B and Class C space could be converted to residential use in the near future, most of this vacant space will be available to accommodate new job growth over the next several years.

In addition, newly constructed office space will be coming online in Midtown and elsewhere over the next few years. The Time Warner Center at Columbus Circle, which is just about complete, has 1.1 million square feet of office space. The Bloomberg building at 59th Street and Lexington Avenue will have 0.9 million square feet. The New York Times building on Eighth Avenue will have 1.5 million square feet of office space. One Bryant Park will have 2.1 million square feet. Taken together, these new buildings alone will add 5.6 million square feet of Class A office space to the city's stock. And several million additional square feet of office space are either under construction or planned for Manhattan, according to the Real Estate Board of New York and other sources. These data indicate that the total amount of new office space in progress or planned in Manhattan (excluding the Freedom Tower and 7 World Trade Center at the World Trade Center site) is 12.3 million square feet. While some of these new buildings have tenants lined up, much of the space under construction currently remains unleased. Moreover, some of the new building tenants will be creating vacant space elsewhere in Manhattan when they move.

It seems reasonable to believe that a return of office employment to its 2000 peak could absorb much of the currently vacant and forthcoming office space by 2010, leaving the city with a vacancy rate of about 8 percent by the end of the decade. The total office employment gain would be about 128,800 from its 2003 level. If we assume that each new job would require 250 square feet (including shared space), this job gain would require about 32.2 million square feet of office space. However, a more appropriate assumption for future space needs could be 200 square feet, given the continued shift toward cubicles and open office configurations and substitution of technology for storage space.[4] In this case, the job gain would require 25.8 million square feet. And if we take a middle value of 225 square feet per job, the space required would be about 29 million square feet. Deducting this middle

Projected Office Employment and Space Requirements in 2035			
Assumed Annual Growth Rate for Office Employment (thousands):	**0.4%**	**0.6%**	**0.8%**
Level	1,395.1	1,466.3	1,540.9
Gain from 2010 to 2035	132.5	203.7	278.3
Space Required Assuming 8% Vacancy Rate (millions of sq. ft.):			
250 square feet per job	36.0	55.3	75.7
225 square feet per job	32.4	49.8	68.0
200 square feet per job	28.8	44.2	60.5

SOURCE: IBO; Data on potential office development sites in Manhattan are from the Real Estate Board of New York.

estimate from the total of 60.9 million square feet available (48.6 million vacant plus 12.3 million of new construction) leaves 31.9 million square feet vacant —which roughly results in an 8 percent vacancy rate.[5]

Looking beyond 2010, office space needs will depend on office job growth and space required per job. The wide range of estimated employment gains presented above and alternative assumptions about required space per job together translate into a wide range of estimates for the amount of office space necessary to accommodate new office employment by 2035. Using our midrange estimates of 0.6 percent annual growth and 225 square feet per new job, and assuming a vacancy rate of 8 percent for new space (as with old), a midrange estimate of required office space would be 49.8 million square feet of office space to accommodate about 203,700 new jobs between 2010 and 2035. The need for office space could be as low as 28.8 million square feet, however, assuming low office job growth and a small space per job, or as high as 75.7 million square feet, assuming high office job growth and a large space per job.

OFFICE SPACE: PLANNED AND POTENTIAL

The city and state have announced plans for office development in several parts of the city. Perhaps most familiar is the Lower Manhattan Development Corporation's plan for the World Trade Center site, which calls for 10 million square feet of office space to be built over the next decade. The Bloomberg Administration's Master Plan for Hudson Yards (defined roughly as the area between 28th and 42nd Streets from Eighth Avenue to the Hudson River) calls for 28 million square feet of office space to be built by 2035. The city's Downtown Brooklyn plan allows for 4.5 million square feet of new office space within 10 years. These three projects alone add up to 42.5 million square feet.

A comparison of the proposed 42.5 million square feet of office space at the World Trade Center, Hudson Yards, and Downtown Brooklyn to projected office space needs suggests that the city could actually face a shortage of office space in 2035—if the office space in these proposed developments were the only space available and office employment grew at a rate of 0.6 percent or more. However, the office space in these proposed projects will probably not be the only new office space available and slower office job growth is possible.

Using market data, IBO has identified potential sites for commercial development (outside of Hudson Yards and the trade center) that could accommodate 13 million square feet of office space in Midtown and Lower Manhattan. (This amount is in addition to 12.3 million square feet under construction or planned for the near term.) This alternative development could compete directly with the office development proposed at the World Trade Center site, in Hudson Yards, and in Downtown Brooklyn. In terms of location, at least some of this alternative space would have strong advantages over the proposed development sites.

Rezoning initiatives, both underway and planned, also would allow significant office development outside of Manhattan, including Long Island City and Jamaica in Queens and the Hub in the Bronx. In addition, 2 million square feet of office space have been proposed for Atlantic Yards in Brooklyn (the proposed home for the Nets basketball team) beyond the 4.5 million square feet in the recently approved Downtown Brooklyn plan.

Major Office Development Planned for New York City and Implied Employment

Location	Total Space in Square Feet	Approx. Time to Completion	Office Jobs to Fill: 250 sf/job	225 sf/job	200 sf/job
World Trade Center	10.0	10 years	40,000	44,444	50,000
Hudson Yards	28.0	30 years	112,000	124,444	140,000
Downtown Brooklyn	4.5	10 years	18,000	20,000	22,500
Total from 3 Plans	**42.5**		**170,000**	**188,888**	**212,500**

SOURCE: IBO.

If all of these alternative sites were developed to their maximum potential (15 million square feet), the remaining demand for office space would be

34.8 million square feet (assuming our midrange estimate). If this occurs, building at the World Trade Center, Hudson Yards, and Downtown Brooklyn sites could fall short of the 42.5 million square feet allowed by 7.7 million square feet. Reducing space per worker in existing office buildings would further lower the need for new office space.

Long-term projections can be viewed as tentative, at best. Nevertheless, under reasonable assumptions, it appears that the city and state plans for the three major sites may allow more office space than needed. This could lead developers to choose not to build at these sites or to build at a slower pace than assumed by the city and state plans.

Written by Theresa J. Devine

ENDNOTES

[1] As necessary, data from employers were dual-coded under both SIC and NAICS for the first quarter of 2000, and SIC-NAICS industry ratios for that quarter were used to estimate NAICS industry-level employment histories back to 1990.

[2] This difference in counts partly reflects the difference in BLS treatment of office jobs in company headquarters. These jobs are not reported separately from production jobs in the SIC data, but they are reported separately under professional and business services in the NAICS data. Consequently, we miss office jobs in headquarters for firms in manufacturing, transportation, and other industries not included in our SIC definition. Under both definitions, we suspect that we miss some additional office jobs, but these are at least partially offset by unintended inclusion of some production jobs.

[3] IBO uses the fourth quarter 2003 office space data because we use annual office employment for 2003 as our base. Recent data show improvement over the fourth quarter of 2003. Cushman & Wakefield report that in the second quarter of 2004, the vacancy rate was down to 11.8 percent. This improvement is not inconsistent with our assumptions or analysis.

[4] This assumption of 200 square feet per job was used by the New York City Partnership in their 2003-2004 report, *Transportation Choices and the Future of the New York City Economy*, available at www.nycp.org.

[5] Office space outside of Manhattan that is either currently vacant or under construction is not counted in the 60.9 million square feet of available space, and counting this space could push the citywide vacancy rate up above 8 percent. However, this addition could be offset by conversion of office space to residential space, which we do not deduct from the 60.9 million square feet available.

Note, also, that future office space demands will depend on the types of new office jobs that are created in or attracted to New York City, as well as the needs of current employers seeking to stay here. As we saw in the dot.com boom, new start-ups are not likely to demand Class A space at 250 feet per job, while more mature firms are likely to view large floor plates and other modern features as necessary.