VIEWPOINT
MANHATTAN OFFICE MARKET

What to Expect from the Impact of COVID-19 on the Manhattan Office Market

CBRE

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While there is uncertainty over how long the COVID-19 pandemic will last, it is inevitable that there will be many hardships and challenges ahead. CBRE shares in the concerns and sorrows of those in our communities who are currently suffering. But we are also inspired by the resiliency of our city and the power of our nation to endure through difficult times. CBRE is committed to helping our people, our clients and our communities weather the challenging times ahead.

EXECUTIVE SUMMARY

The COVID-19 pandemic has thrust the world into a monumental public health crisis. Local, regional and national governments are racing to slow the spread of the virus and protect human life. The response has included widespread restrictions on mobility and personal interaction, resulting in severe constraints on commerce and economic activity. A global recession appears inevitable.

In the U.S., New York is an epicenter of COVID-19 infections, which are growing exponentially and likely will continue to surge for weeks.

With dire warnings about potential loss of life, the immediate focus is on shoring up the health-care system to treat the sick and on taking actions to limit the spread of the virus. Local and state governments likely will maintain tight restrictions on mobility, including prohibiting workplace access for most of the region's workforce. For its part, the New York real estate community is taking steps to maintain safety in the workplace and to support the healthcare and public sectors by providing supplies and spaces to combat the crisis.

While it is too soon to offer definitive answers to how the COVID-19 crisis will impact the New York real estate market, there clearly are rough times ahead, especially for the hotel and retail sectors. CBRE and others forecast heavy job losses and more than 20% contraction of U.S. GDP in Q2 2020. But a strong recovery is expected to kick in during the second half of 2020, as the impact of a massive government stimulus package helps revive consumer spending and return businesses to healthy footing.

The impact of this crisis on the Manhattan office market could be less long-lasting and the recovery could be faster than after the September 11 attacks and the Great Recession. Instead, it could mirror the recovery of Asian economies during the SARS outbreak in 2002, where sharp but short-lived declines in economic activity caused a temporary weakness in the real estate market that was largely resolved after one or two quarters. Indeed, China's initial recovery from its COVID-19 outbreak appears to be following a SARS-like trajectory and could offer hope of a similar path forward for the U.S.

CBRE is closely monitoring the global, national and local impacts of the COVID-19 pandemic to anticipate the Manhattan office market's performance in the years ahead.

These indicators include:

- Job losses, especially in New York's major office-using sectors
- Stock market performance
- Changes in office demand and leasing velocity, with a shift to renewals and fewer relocations
- Repricing of existing space
- Dispositions and sublease inventory
- Changes to the development pipeline
- Performance of the flexible-space market

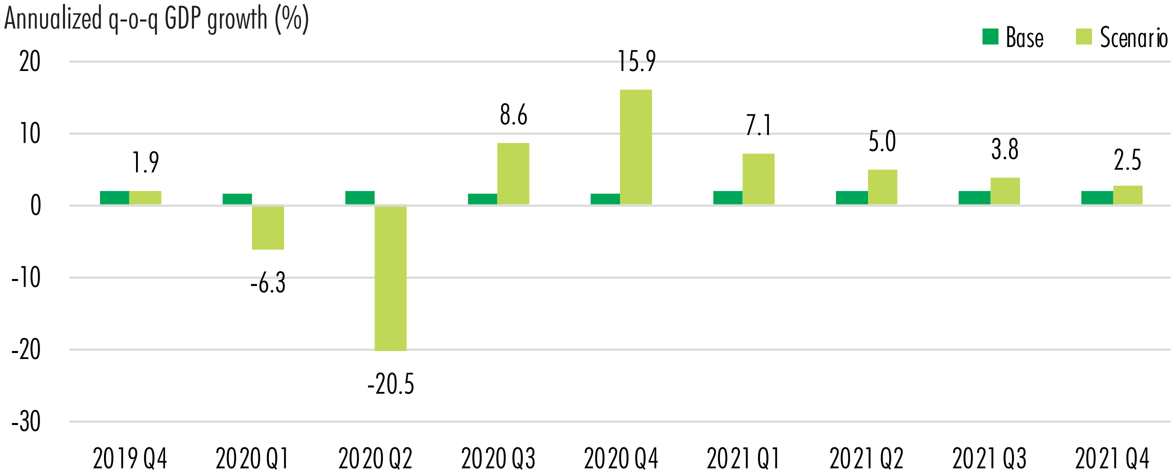
On a macro level, the health of the corporate debt market and the overall stability of the financial system should be closely monitored, as well as the strength of the ongoing Chinese economic recovery and whether a second outbreak occurs there.

Longer term, new considerations for promoting health and safety in the workplace will likely emerge in the wake of COVID-19. Conversations are already being had about stepping back on workplace densification and desk sharing, improvements to HVAC and air filtration systems, and contactless security systems as potential future responses to the current crisis. More discussion will likely follow as the industry works through the impact of COVID-19 and processes the lessons learned from this crisis to become more prepared and resilient to future occurrence.

CBRE COVID-19 ECONOMIC OUTLOOK

A brutal Q2 awaits, but we anticipate a considerable recovery beginning in Q3. As of March 25, CBRE forecasts that GDP will contract by 6.3% in Q1 and by 20.5% in Q2, before returning to growth of 8.6% in Q3 and nearly 16% in Q4.[1]

Figure 1. U.S. GDP Quarterly Growth Profile



Source: CBRE Research, March 2020.

For full-year 2020, U.S. GDP will decline by 2.8%, with the rest of the G7 economies contracting as well. Unemployment in the U.S. will rise to 6.1% in Q2 from 3.5% currently and then gradually fall below 4% by year-end. This reflects an estimated net loss of 13 million jobs. Employment sectors with the most job losses will be tourism/ hospitality, retail/restaurants/personal services, entertainment and oil & gas. The hit to the overall economy and the declining stock market likely will lead to additional losses in other sectors, including office-using employment.

CBRE's economic forecast for 2021 is for 6% annual growth, up from the 1.9% that was expected before the COVID-19 crisis. The lack of consumer spending during this crisis will result in an unleashing of pent-up demand once it is resolved. Recent fiscal stimulus, interest rates cuts and measures to ensure the flow of credit will support both business and consumer spending. The recently passed CARES act will provide total support equivalent to one-quarter of U.S. GDP or $5.6 trillion, an unprecedented amount of stimulus. Fiscal measures in Europe and Asia will also be historic and help fuel a global economic recovery.

1. CBRE's March 25 forecast is likely to change as more data on the economic situation becomes available. Our outlook is anticipated to remain in line with other forecasts, such as Goldman Sachs and Oxford Economics who have forecast declines in Q2 2020 GDP of up to -34% as of April 1, 2020, and thereafter a recovery in growth.

THE STATE OF THE MANHATTAN MARKET BEFORE COVID-19 HIT NYC

Both the U.S. and NYC economies were in good shape before COVID-19 reached American shores. The U.S. ended 2019 with annual GDP growth of 2.1% and a near historic-low unemployment rate of 3.5%. Similarly, NYC closed out 2019 with annual gross city product (GCP) growth of 2.4 %, record low unemployment of 3.6% and office-using employment just shy of its 1.75 million peak in October 2019. The stock market had been on a tear, with all three of the major U.S. indices (S&P 500, DJIA, NASDAQ) at record highs as recently as mid-February.

These factors supported strong office demand, with an all-time-high 92.5 million sq. ft. of leasing activity (new leases and expansions) in the three years from 2017-2019.

Average asking rent across Manhattan was at a historic high. The availability rate ended 2019 at 11.2%, continuing the relative stability and equilibrium of the previous four years despite 14.6 million sq. ft. of new construction. Manhattan office occupancy reached 368.1 million sq. ft. at year-end, very near the all-time high reached in July 2019. While the rate of economic growth had begun to slow, there was enough strength in the economy to generate 14.3 million to 16.2 million sq. ft. of active tenant requirements in the Manhattan office market, much of which reflected tenants' anticipated headcount growth.

The strong demand, coupled with a healthy availability rate and a steady influx of high-end space deliveries, fostered rent growth. Average asking rent reached $81.45 per sq. ft. in March 2020, up by 1.3% from year-end 2019 and just slightly off the all-time high of $81.52 per sq. ft. reached in September 2019.

NEWS FROM THE FIELD

WHAT CBRE IS SEEING ON THE GROUND TWO WEEKS INTO NEW YORK'S COVID-19 RESPONSE

While is it too soon to determine the full impact of COIVD-19 on the Manhattan office market, some useful insights can be gleaned from what's happened during the first few weeks. CBRE professionals have been in constant communication with our clients—including occupiers, landlords, investors, property managers and project managers—which has formed the basis for following insights on the current state of the market.

1. While some transactions well underway prior to the crisis have proceeded to close, most are on hold as tenants take a "wait and see" approach to real estate decisions. Tenants are revisiting underlying assumptions about future space needs, considering capital preservation, and watching for price adjustments. That said, very few tenants have altogether cancelled their searches.

2. Despite several capital markets transactions falling out of contract or cancelled financings, deals are still getting done. There is still considerable equity capital eager to make purchases, and debt markets—which seized up two weeks ago—are opening back up.

3. No CBRE agency properties have adjusted rents on available space at this time, but several landlords seem willing to increase concessions if a tenant will proceed to execution.

4. Occupiers have presented CBRE with very little surplus office space for disposition at this time.

5. While tenants have been reviewing their leases to determine the extent, if any, to which the provisions might afford them a right to a rent abatement, language providing for a rent abatement under the current circumstances are the exception. Instead, occupiers seeking rent relief may opt to negotiate and explore with their landlords various ways to restructure upcoming rent payments, such as a period of temporary rent abatement in exchange for equivalent lease extensions or amortization of abated rent payments.

6. Tenants with lease expirations on the immediate horizon are considering short-term lease extensions as a temporary solution.

7. Tenants are complying with government directives that all non-essential workers refrain from coming to offices. CBRE Property Management reports that within the approximately 100 buildings CBRE manages in Manhattan, tenant occupancy is down to about 2% on average. Nevertheless, buildings remain open to serve essential workers/businesses, with continuation of critical staffing for health and safety, security, building engineers, etc. CBRE Property Management staff are staying in hotels near work sites to maintain access to buildings as needed.

8. New York Governor Andrew Cuomo ordered the temporary suspension of all non-essential construction projects as of Friday, April 3. The moratorium, which affects all projects expect infrastructure, healthcare facilities and affordable housing, is in place through at least April 26.

GOVERNMENT RELIEF MEASURES TO ADDRESS THE ECONOMIC FALLOUT OF THE COVID-19 CRISIS

The COVID-19 stimulus bill passed by Congress in late March, formally called the CARES Act, provides resources for people, businesses, states and hospitals that are dealing with the spread of COVID-19. The stimulus package provides support directly and indirectly to all sectors of the economy.

The CARES Act will inject $2.1 trillion (9% of U.S. GDP) directly into the U.S. economy, and the new credit facilities created by the law brings the total relief aid to $5.6 trillion. At almost 25% of U.S. GDP, the scale of this intervention is unprecedented.

WORKERS & FAMILIES

- $250 billion was allocated for enhanced unemployment benefits. This will provide an additional $600 per week for up to four months.
- $300 billion for direct payments of $1,200 sent to all adults who filed tax returns in 2019 and made less than $75,000 per year ($150,000 for couples) and $500 per child. Smaller amounts will be distributed to people making up to $100,000 a year or couples earning less than $200,000.

LARGE BUSINESSES

- $500 billion in assistance for large businesses that have been particularly hard hit, such as $32 billion in grants for airlines.
- Credit facilities backed by approximately $471 billion of the $500 billion allocated for large businesses will allow for up to $4 trillion in liquidity support for large businesses. This means easy access to cheap loans.

SMALL BUSINESSES

- Small businesses will receive direct help via $350 billion for loans from Small Business Administration (SBA) to help small businesses retain employees. The program will use an expedited process—administered by private financial institutions—to cover payments for rent/mortgage, utilities and payroll. These loans will be converted into grants at the end of the year if used for intended purposes.

PUBLIC SECTOR & OTHER AID

- $150 billion for states
- $25 billion for public transportation
- $117 billion for hospitals
- $198 billion for "other"

Much of the aid for commercial real estate will be in liquidity support for tenants. Occupiers of all sizes across the office, retail, industrial and hotel sectors may qualify for aid.

A key component is SBA loans for small companies—particularly food & beverage (F&B) operators, who have been severely impacted by mandatory closures. For businesses with less than 500 employees, loans will be forgiven by the government at the end of the year if funds are used as intended. Loan amounts can be up to $10 million and will be calculated as 2.5 times the pre-crisis monthly payroll amount. More government guidance on this will be forthcoming.

Due to the sheer scale of the CARES Act, every commercial real estate sector will be aided.

Beyond fiscal policy, additional crisis measures by the Fed will help ensure that property market fundamentals and capital markets for commercial real estate are supported through this turbulent period. Although enacted today, there will be a lag of up to three months before certain parts of the stimulus are fully deployed.

WHAT WE ARE WATCHING TO GUAGE THE OFFICE MARKET IMPACT

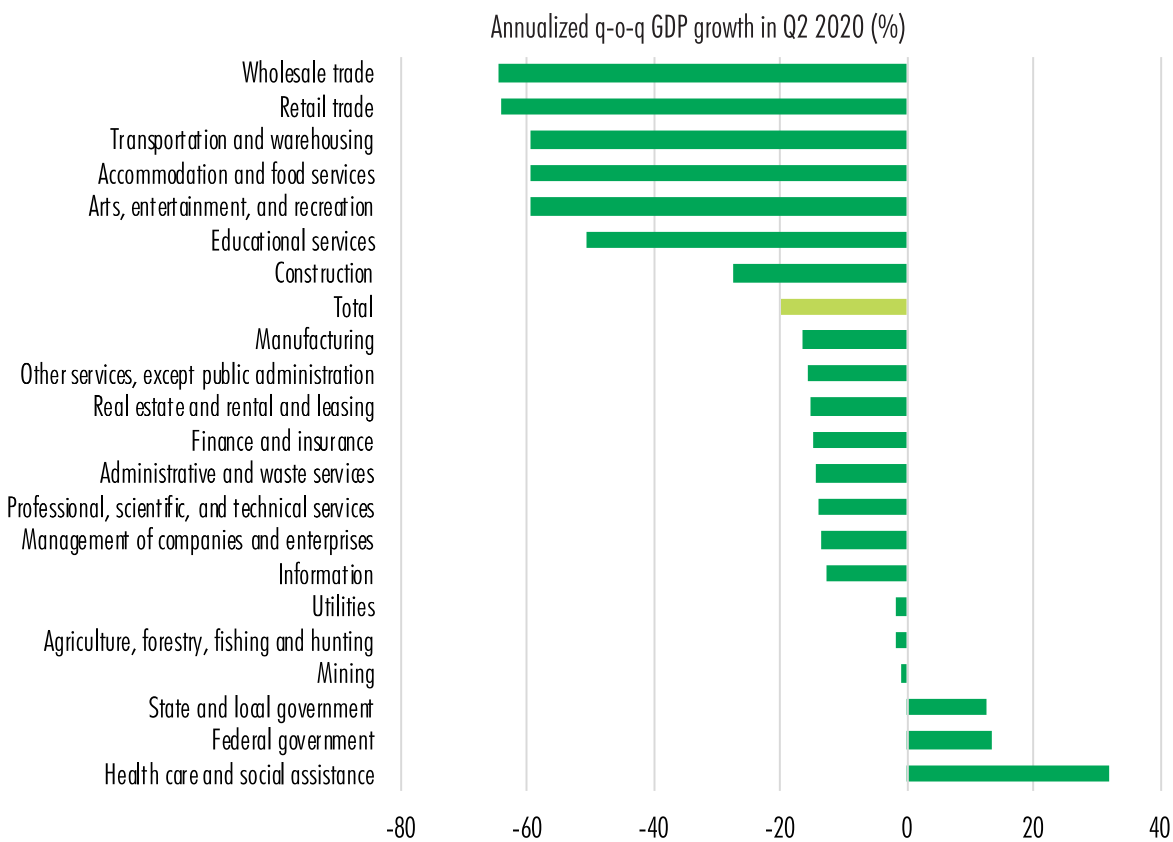
While we expect a significant slowdown in the U.S. economy and millions of job losses over the next several months, there is not yet enough information to accurately assess how this crisis will affect the Manhattan office market. There are many factors to watch over the next several weeks that will allow us to better gauge the likely impact on the local market.

JOB LOSSES BY SECTOR

The extent of New York's office-using job losses and the pace of employment recovery will determine the trajectory of Manhattan office market performance over the next two years or more.

Industries that likely will be most adversely affected include hotels, F&B, retail, wholesale trade, travel and transportation (particularly airlines), and educational services. Most of the impact on these industries will affect real estate asset classes other than office to a much greater degree.

Figure 2. U.S. Assumed Economic Impact by Industry



Source: BEA, Oxford Economics, CBRE Research, March 2020.

Office-using industry sectors such as professional services, real estate, finance/ insurance and information are expected to see smaller impacts, but the overall slowdown in the U.S. and global economies likely will impact performance of these sectors. How employment fares in these industries will determine the future demand for office space and the likelihood of space disposition.

Figure 3. Manhattan Occupancy by Industry - YE 2019

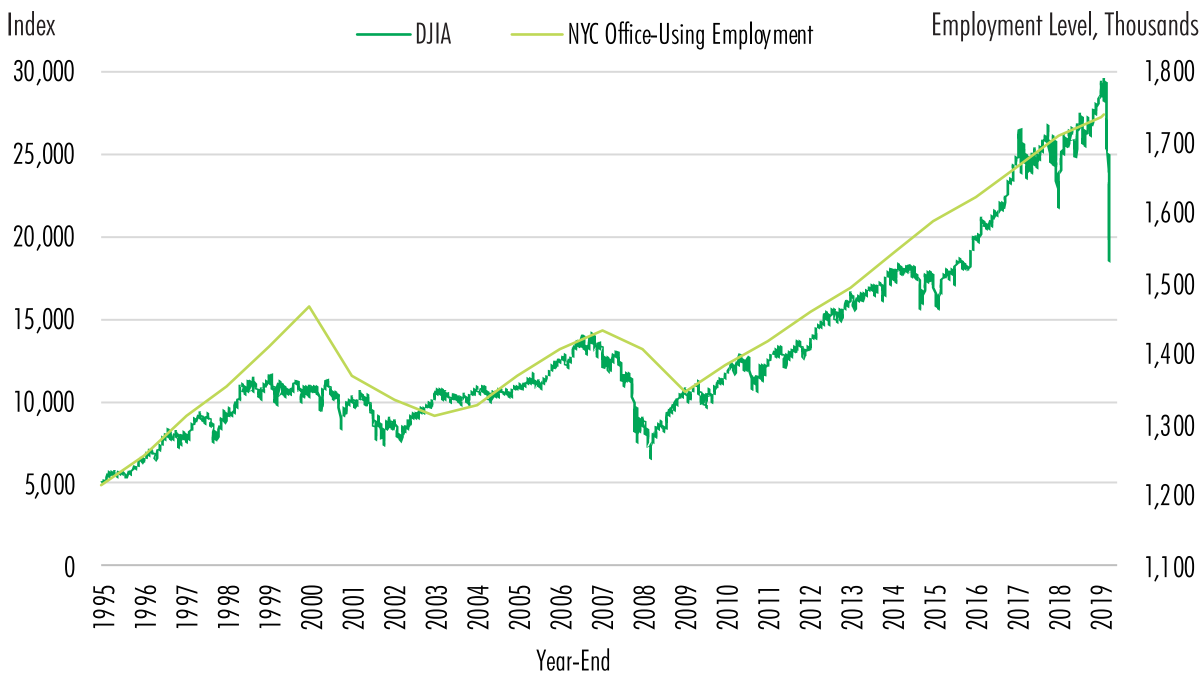
Industry	MSF*	% of Total*
Financial Services	90.0	24%
Law	34.9	9%
Media & Entertainment	34.1	9%
Technology	28.0	7%
Apparel/Retail Sales	27.6	7%
Government	20.7	5%
Other	20.5	5%
Professional Services	19.5	5%
Marketing/Public Relations	16.5	4%
Coworking/Shared Space	15.7	4%
Health Care	13.7	4%
Insurance	13.3	3%
Non-Profit	12.3	3%
Real Estate	11.4	3%
Education	10.2	3%
Telecom/Info Services	8.4	2%
Arts & Recreation	5.9	2%
Manhattan Total Occupied	**382.5**	
Manhattan Total Inventory	**414.2**	

*MSF and % of Total figures do not add up exactly due to rounding
Source: CBRE Research.

STOCK MARKET

Impacts of this crisis on office-using industry sectors likely will lag those of the overall economy. However, a leading indicator of likely impact, especially in New York City, is the performance of the major U.S. stock market indices. The significant declines in the U.S. stock market during the past two major economic crises were followed by substantial drops in office-using employment. Financial services and tech are two industries that are especially susceptible to stock market volatility.

Figure 4. Dow Jones Industrial Average vs. NYC Office-Using Employment



Source: BLS, FRED, S&P Dow Jones Indices. Employment data as of February 1, 2020. Index data as of March 27, 2020.

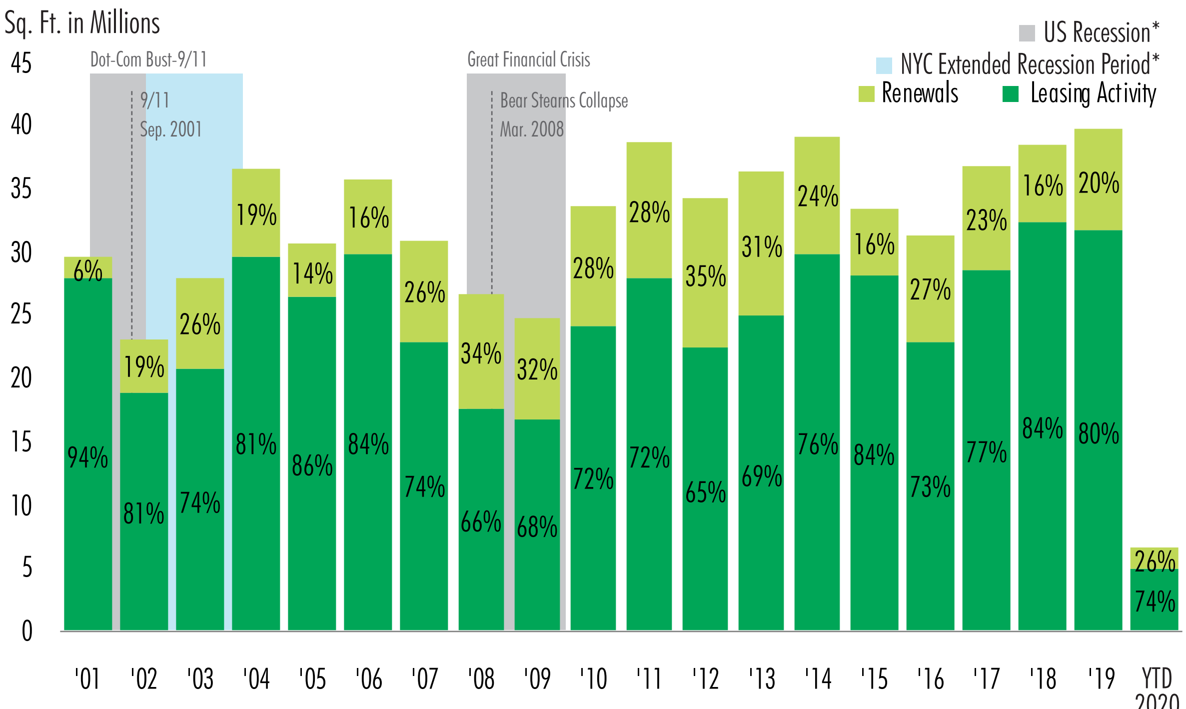
Expectations for the tech industry in terms of employment and occupancy are somewhat mixed. In general, the tech sector seems well positioned to weather the current economic downturn, especially for companies focused on e-commerce, home-health and fitness tech, streaming media and tools that support remote work and communication. On the other hand, some of the publicly traded tech and tech-adjacent companies that are cash-flow negative are especially vulnerable to sharp declines in the stock market. A prolonged period of stock market decline could result in job losses and merger & acquisition activity, both of which would lead to occupancy reduction and increased dispositions.

A SLOWDOWN IN TOTAL LEASING VELOCITY, WITH A DECLINE IN NEW LEASES AND EXPANSIONS, AND A SHIFT TO RENEWALS AND SHORT-TERM EXTENSIONS

Following the Dot-com Bust/September 11 downturn and the Great Recession, leasing activity (new and expansion deals, excluding renewals) declined by 16% and 23%, respectively, in the following year. The current COVID-19 crisis is already impacting the Manhattan office market, with a slowdown in new leasing activity as many companies wait to see how the economy and their businesses respond. A considerable interruption of new leasing activity is expected in Q2 and Q3.

While new leasing activity likely will slow this year, previous experience suggests a shift to lease renewals, which should increase in share of total leasing velocity (new activity plus renewals). Part of this increase is due to the need to extend beyond fast-approaching, near-term lease expirations (approximately 15.5 million sq. ft. in 2020). Tenants temporarily unable to physically tour new spaces, complications about interior buildouts and the limited appetite for outlaying capital during this uncertain period would further support increased volume of renewals. Landlords concerned about increasing vacancy likely will be increasingly willing to provide short-term deals for existing tenants.

Figure 5. Manhattan Leasing Velocity



*US recession as measured by the NBER. NYC recession as measured by GCP.

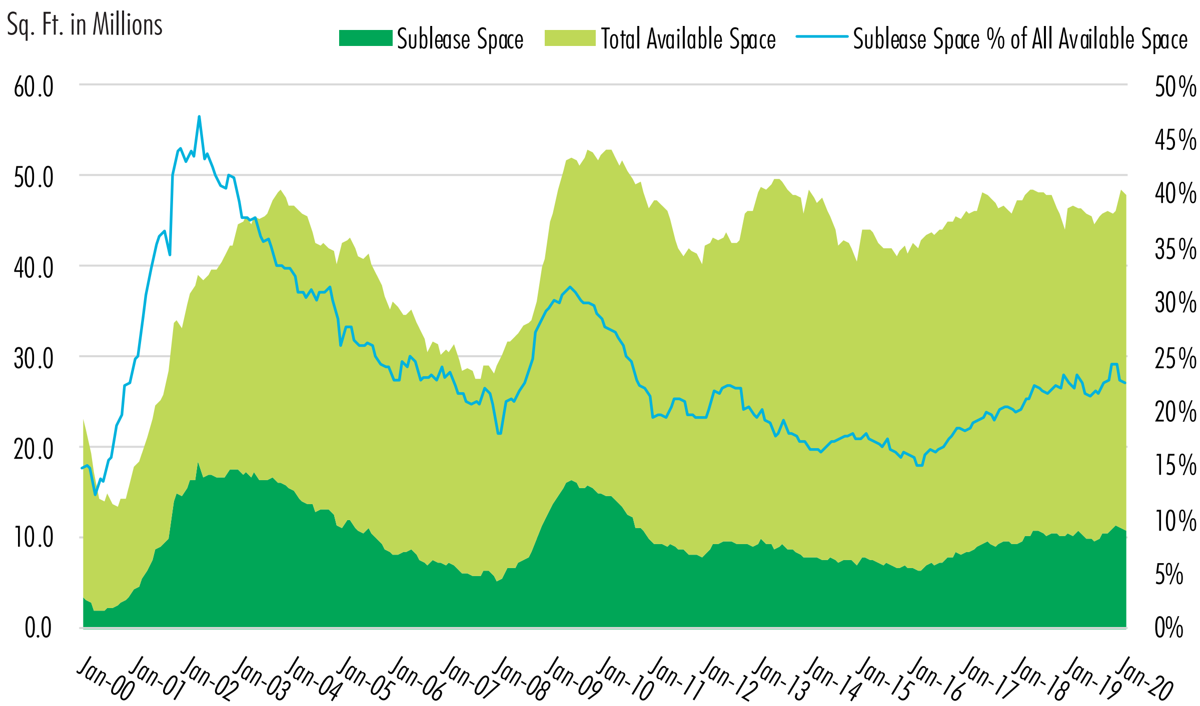
Sources: CBRE Research.

INCREASE IN SUBLEASE SPACE, A LEADING INDICATOR OF RENT DECLINE

If there is significant job loss among office occupiers, an increase in dispositions is expected. The greater the amount of sublease space on the market, the more likely that market rents will fall. There will be a lag before this impact occurs.

The ratio of sublease space as a percentage of the total available space is a telling metric of the effect of layoffs on the market. Heading into this crisis, the Manhattan market was in a healthy position with respect to sublease availability, as the ratio has been between 20 and 24% for the past 24 months. If we see the sublease ratio increase to the levels seen in the previous two crises—31% during the Great Recession and 47% during the dot-com and 9/11 crisis—we would likely see downward pressure on overall market rent.

Figure 6. Manhattan Sublease Space

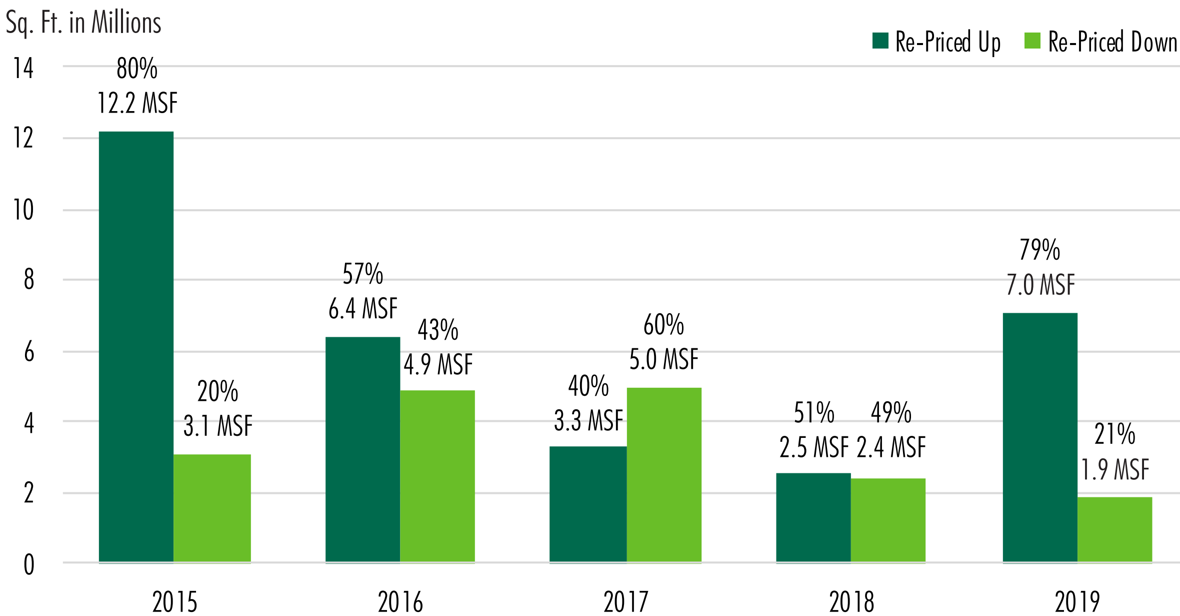


Source: CBRE Research. Data as of March 1, 2020.

REPRICING ON EXISTING SPACE

Over the past few years, there was a clear trend toward upward repricing. Under the current environment, CBRE will watch this trend closely to gauge how much pressure landlords are feeling to drop rents.

Figure 7. Manhattan Annual Repricing Trends | Direct Space 2015-2019



Source: CBRE Research.

Any repricing of space will occur in stages and in line with any increases in the availability rate and in sublease space. Assets with significant availability likely will be the first to reprice. Resistance to repricing of new construction and highly renovated redevelopment projects is expected.

SIGNPOSTS

WHAT CHINA'S RECOVERY FROM COVID-19 TELLS US ABOUT THE FUTURE

Hotel demand
It took about six weeks for hotel demand to stop falling. The U.S. currently is about three weeks into its crisis.

Retail
80% of shopping centers are re-opened, including 85% of Starbucks.

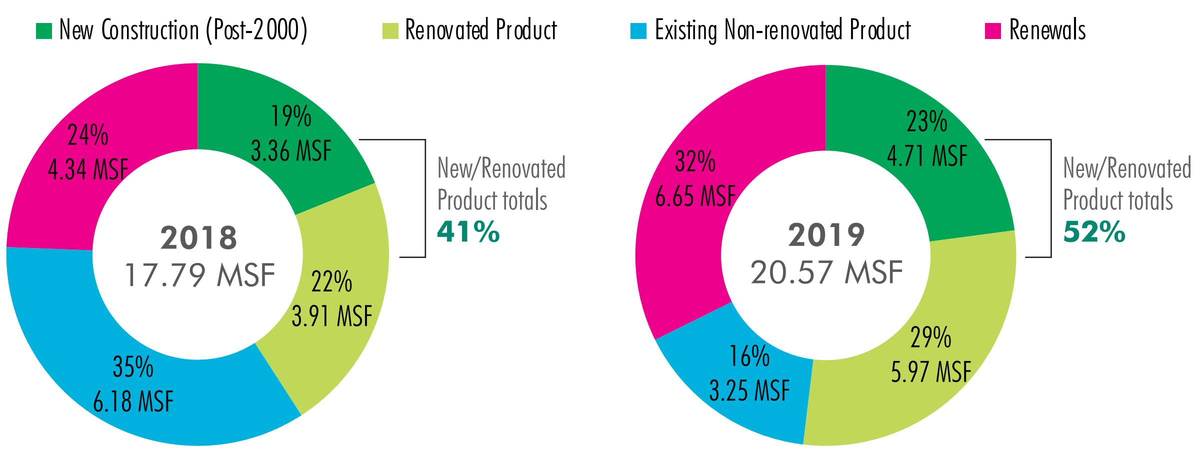
Industrial
As of the first week of March, more than 80% of manufacturing companies that export goods from China have resumed operation.

Most importantly, e-commerce (shipping) came back after near total shutdown, and is almost 100% operational today.

FLIGHT-TO-QUALITY TREND

Any potential decline in leasing activity and an increase in renewals and extensions could cause a short-term decline in the Manhattan office market's flight-to-quality trend of the past several years.

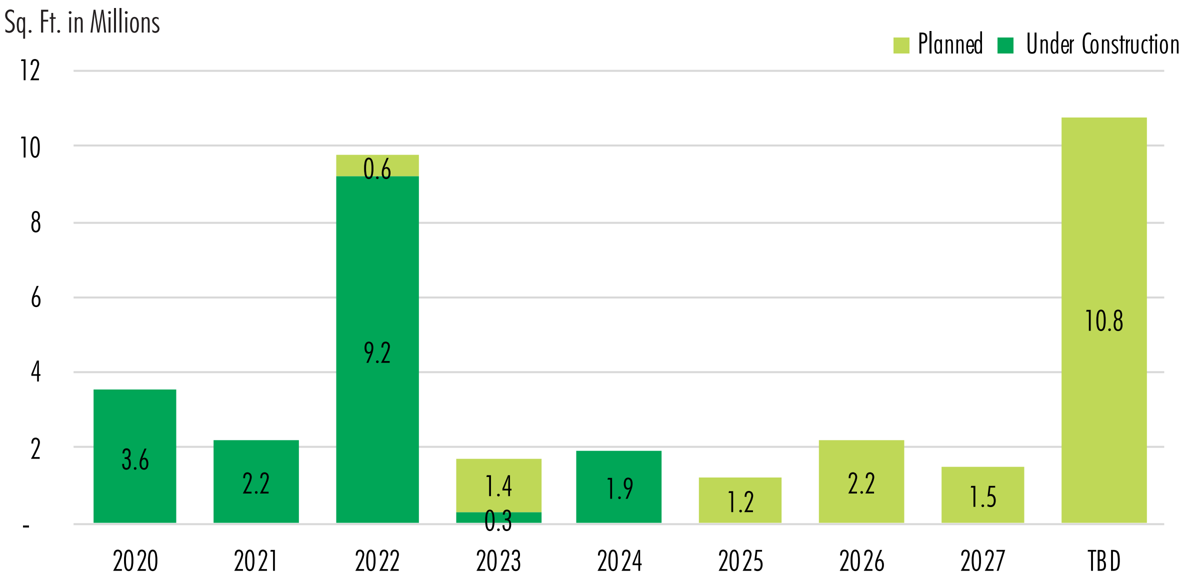
Figure 8. Manhattan Annual Leasing by Product Type
Blocks 50,000 Sq. Ft.+



Source: CBRE Research.

All non-essential construction projects, including office buildings, were ordered shut down by April 3. However, it is still too early to tell the full impact of this moratorium the on delivery dates of projects currently under development.

Figure 9. Manhattan Ground Up Construction : Underway and Planned 2020-2027+



Source: CBRE Research.

STRESS-TESTING THE FLEXIBLE-SPACE MARKET

The widespread availability of flex-space options in Manhattan and tenants' instinct to conserve capital might drive an uptick in user demand for flex space as a short-term solution to real estate needs. At the same time, the overall flex sector could experience financial strain, as work-from-home directives lead to membership cancellations and diminished cash flow for operators. This could lead some flex-space operators, many of whom are single-purpose entities, to hand the keys back to landlords, which would further increase office availability.

ISSUES TO WATCH IN THE MACRO ECONOMY THAT SIGNAL DOWNSIDE RISK

- A wave of loan defaults that undermine confidence in the financial system or a big corporate failure; particular attention should be paid to the BBB corporate debt market, which has surged in recent years.
- China suffers a loss of growth in main export markets.
- A second wave of COVID-19 in Asia that causes another lockdown.

WHAT WE CAN LEARN FROM PREVIOUS CRISES: SARS, SEPTEMBER 11 AND THE GREAT RECESSION

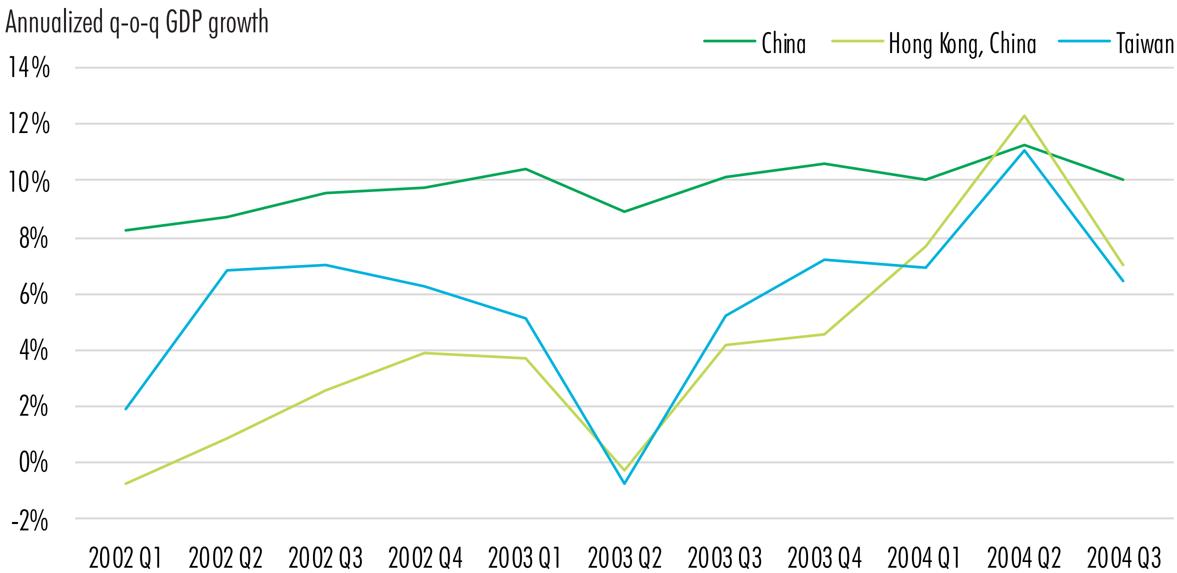
SARS

While the U.S. emerged largely unscathed from the SARS pandemic of the early 2000s, the nature of the crisis and its economic consequences offer perhaps the most analogous glimpse of how the COVID-19 crisis might unfold. Both cases involve a highly contagious virus that threatened public health and led to social isolation measures that impacted economic activity. Although the COVID-19 crisis likely will result in greater economic losses than occurred under SARS, there is cautious optimism that a strong public response to slow the spread and provide aid to affected households and businesses can lead to a relatively quick, robust recovery.

After originating in Guangdong Province, China in November 2002, SARS rapidly spread throughout Asia, Europe and North America before being contained in July 2003. All told, the disease infected roughly 8,000 people and claimed nearly 800 lives. The hardest hit areas were Mainland China, Hong Kong and Taiwan, which together accounted for 92% of the cases and 93% of deaths. The U.S. reported only 27 cases and no deaths.

The impact of SARS on the local economies of Hong Kong and Taiwan was severely negative in the short term, before a swift, sustained and strong bounce back once the virus was contained.

Figure 10. SARS Had a Short-term Impact on the Greater China Economy



Source: Oxford Economics, January 2020.

Taiwan's GDP growth peaked at around 7% and Hong Kong's at approximately 4% pre-crisis, before contracting to -0.7% and -0.3%, respectively, in Q2 2003. By Q2 2004, both returned to growth of more than 10%. To varying degrees, there were similar patterns of retail sales growth and office rent growth in those regions. Office demand also fell in Hong Kong and Taiwan during the crisis, with negative or very little positive net absorption through Q2 2003, before improving in subsequent quarters. Should the timing from inception to containment of the COVID-19 crisis in the U.S. follow suit, a similar economic recovery scenario could occur.

9/11 & THE GREAT RECESSION

The COVID-19 crisis has generated fears about health, safety and livelihood that remind many New Yorkers of their experiences from the September 11 terrorist attacks and the Great Recession. While there are some similarities (disruptions to daily life, economic slowdown, job losses, fear and uncertainty about the future), there are notable differences between these past crises and the COVID-19 outbreak that suggest different economic and real estate outcomes for the Manhattan office market:

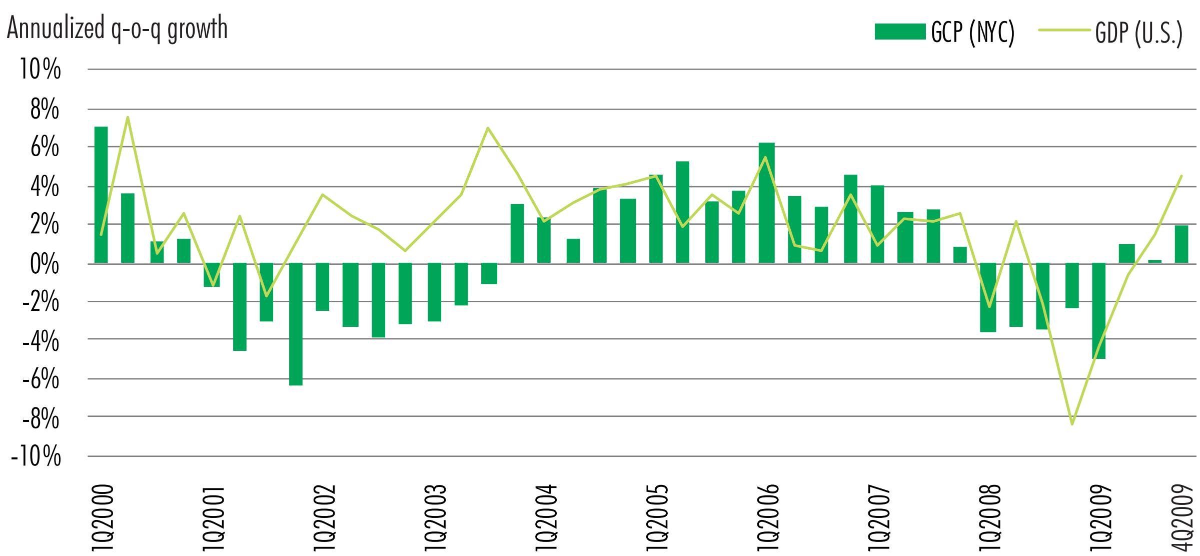
- The underlying fundamentals of both the U.S. and New York economies were on much better footing heading into this crisis than they were in either of the past two.
- 9/11 and the Great Recession had a disproportionately large and unique impact on the NYC office market, which likely will not be the case with COVID-19.
- The past two crises were characterized by long periods of decline and slow recoveries. By contrast, COVID-19's impact likely will be short-lived, followed by a strong, relatively quick recovery.
- A massive fiscal and monetary stimulus has been quickly implemented to restore consumer and business spending and to facilitate reemployment—more so than in both previous events.

Prior to the COVID-19 outbreak, the U.S. and NYC economies were recording strong economic growth. Office rents were rising and office demand was strong. Measures to slow the spread of COVID-19 will cause a significant drop in GDP in Q1 and Q2 of this year, but growth is expected to return sometime in Q3. Until then, steep job losses are expected. But as the virus recedes and households and business return to normal routines, the economy should begin to bounce back.

This is a stark difference between the economic situations just prior to the COVID-19 and 9/11 crises. Before 9/11, the U.S. and NYC economies were in significant distress from the fallout of the dot-com bust. The NYC unemployment rate had risen from 5.1% in March 2001 to 6.5% in September 2001 with nearly 52,000 jobs lost in office-using sectors. NYC suffered unique and acute trauma as a result of the 9/11 terror attacks. In addition to the stunning loss of life, the terrorist attacks inflicted considerable damage on Manhattan's Downtown business district, with millions of square feet of office and retail space destroyed, tens of thousands of workers and residents temporarily displaced, and transportation and other critical infrastructure handicapped for months and, in some cases, years. In addition, there was a heightened sense of concern and hesitancy about maintaining business locations in NYC.

All these unique factors contributed to the deep and prolonged decline of gross city product (GCP) and office-using employment in NYC. Though a short-lived U.S. recession ended in November 2001, NYC's GCP contracted for 11 consecutive quarters and its office-using job losses mounted to more than 180,000. These conditions contributed to a substantially weakened NYC office market between 2001 and 2003, with a 25% decline in asking rents and a reduction of 39.1 million sq. ft. of occupied space.

Figure 11. NYC GCP vs. U.S. GDP (2000-2009)

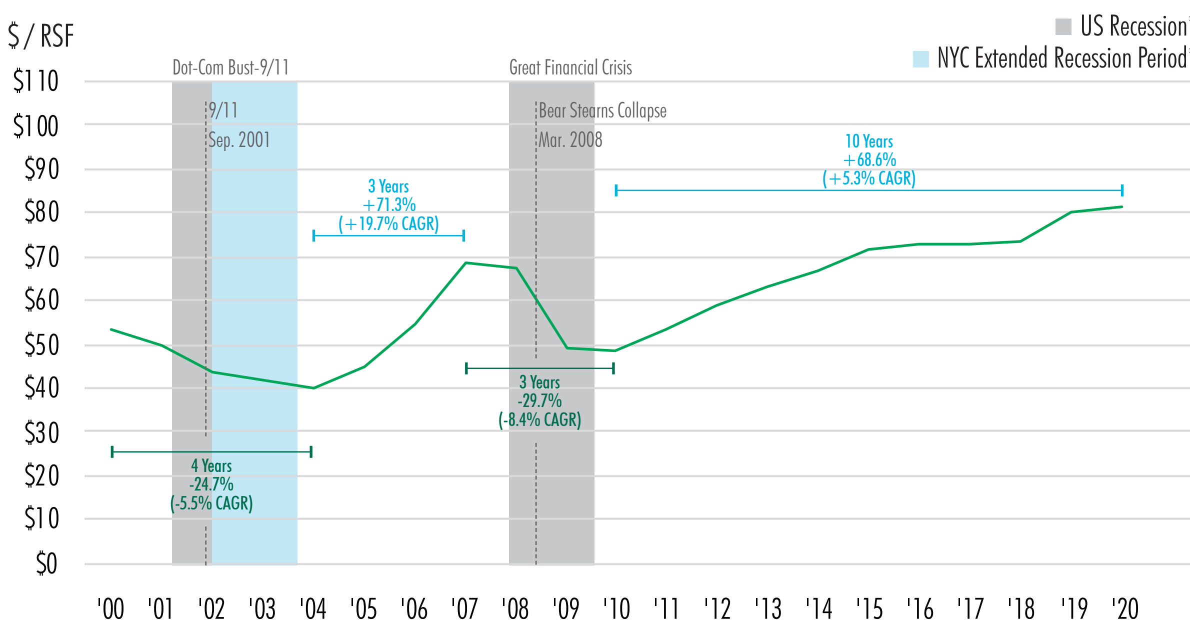


Source: NYC Comptroller, BEA.

Similarly, the U.S. economy was in weakened state prior to the Great Recession of the late 2000s. The housing market had begun to fall apart in 2006 and a wave of defaults on sub-prime mortgages substantially eroded the balance sheets of both households and major financial institutions.

The collapse of Bear Sterns and Lehman Brothers accelerated and deepened the recession. The overnight dissolution of two major NYC-based financial institutions resulted in a wave of layoffs in the financial industry—NYC's largest occupier of office space. From the post-9/11 peak in April 2008, office-using employment declined by 7%, shedding approximately 101,000 jobs over 16 months before finally hitting bottom in August 2009. At 18 months, it was the longest U.S. recession since the Great Depression.

Figure 12. Manhattan Rent Growth
Annual rents with compound annual growth rates



*US recession as measured by the NBER. NYC recession as measured by GCP.

Source: CBRE Research. Data as of March 1, 2020.

CONCLUSION

The New York economy is in for a bumpy ride, but for how long is still unknown. What seems clear now is that most office occupiers in Manhattan are taking a wait-and-see approach to real estate decision-making while they focus on the health and safety of their workers and stabilize their business during this difficult time. A decline in new leasing activity undoubtedly will occur in Q2, but the extent and duration of this slowdown and its impact on office rents, absorption and occupancy is still unclear.

Longer term, new considerations for promoting health and safety in the workplace likely will emerge in the wake of COVID-19. Potential long-lasting responses to the current crisis include less workplace densification and desk sharing, improvements to HVAC and air-filtration systems, and automated security systems. However, these potential responses will be more thoughtfully considered after there is some distance from the immediate crisis.

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