

Future of New York

What's next for the Big Apple?

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Future of New York

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Introduction



New York's unenviable position as an epicenter of a global pandemic cast considerable doubt about its long-term durability as a thriving center of American finance, culture, and the arts. The city lost numerous lives, suffered an exodus of residents, and saw many business establishments shuttered permanently. Tourism plunged, unemployment spiked, and the severity of the economic contraction was unlike any New York had seen before. Investors were, quite understandably, unnerved.

Fortunately, the anxiety began to wane as the year progressed and the introduction of vaccines heralded the promise of an economic recovery, albeit one subject to periodic obstacles. By the third quarter of 2021, demand for residential housing had resumed and plans were being laid for the reopening of offices and the resurrection of entertainment venues. Congress enacted a bipartisan infrastructure bill and, as the nation's most populous city, New York will be a major beneficiary of federal largesse.

New Yorkers are exceptionally resilient. We readily acknowledge that the appearance and subsequent spread of the omicron variant has slowed the nascent economic recovery. The city's perennial budget challenges will prompt robust debate, as will questions over public safety and criminal justice. But we reject the idea that New York's best days are behind it and instead make a concerted argument that its unique attributes still offer investors an opportunity to benefit from its recovery. We encourage you to explore the various topics in this report and suspect that, in doing so, you will share our confidence in the city's future.



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Executive summary

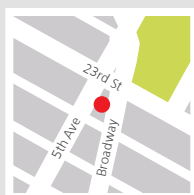
How to invest in the Future of New York

The future of New York looks a lot like the future of America. As the pandemic subsides, as it will eventually, it should lead to a revival in social interaction, a renewed appreciation for sustainable investment, and a resumption of capital investments in physical infrastructure. For expanded investment ideas, see page 61.

Fixed income: Federal fiscal stimulus eased the pandemic-induced financial strain on the Big Apple budget, and credit spreads on the city's municipal bonds have compressed in the past year. However, investors can still find reasonable values in the city's taxable and tax-exempt bonds, many of which are focused on sustainable investments.

Equities: Real estate investment trusts (REITs) with a degree of concentration in the New York metropolitan area are among the ways investors can focus on the city's commercial real estate revival. Exchange-traded funds, including fintech, smart mobility, and e-commerce, are a convenient way to invest in the transformation of the US—and New York—economy.

Alternatives: Private market investments are compelling components of a more aggressive portfolio. For investors who can tolerate a degree of illiquidity, private real estate investments or opportunity zone funds can offer high returns with some tax advantages.



The Flatiron Building was one of the tallest in New York upon its completion in 1902. Standing at 285 feet, it is far from the tallest today. Still, the triangular building was granted status as a New York City landmark in 1966 due to its "special character, special historical and aesthetic interest and value as part of the development, heritage and cultural characteristics of New York City."



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A resilient city

The future of New York's budget

Looking back

Tax receipts plunged in the immediate aftermath of COVID-19, while demand for social services and public assistance spiked higher. New York's health system was overwhelmed as the city became the epicenter of infection. Service sector employment took a big hit.

Looking forward

Federal financial assistance has stabilized the city budget, but new labor contracts with public employees still must be negotiated. Public safety and quality-of-life issues remain a top priority for many New Yorkers as the city recovers from the pandemic.



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A city in motion

The future of transportation

Looking back

After 115 years of continuous service, New York's subway system suspended overnight service for more intensive disinfection. Mass transit and commuter rail facilities were devoid of riders, and aviation demand plummeted at all three major airports.

Looking forward

Demand for transportation services had begun to rebound before the emergence of the omicron variant. Toll facilities and airports have outpaced mass transit, while commuter rail will lag with many employers no longer requiring physical presence in the office every day.



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A city at rest

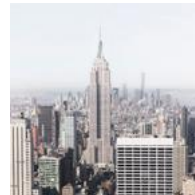
The future of residential real estate

Looking back

Sales of residential property dropped precipitously in the wake of COVID-19, with luxury properties facing the steepest declines. Median rents fell, forcing landlords to offer substantial concessions. Some affluent residents departed and took refuge in other jurisdictions.

Looking forward

The rebound in residential housing has been remarkable. Rents began rising rapidly in the summer of 2021 and the pace accelerated into year-end. As the city's social scene returns to normal, housing demand should remain robust.



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A city at work

The changing nature of work and its impact on commercial real estate

Looking back

Office vacancies skyrocketed as mobility restrictions were implemented and employers adopted hybrid work models. Hotel vacancies rose as business and leisure travelers stayed away. New York temporarily suspended hotel occupancy taxes in an effort to attract visitors.

Looking forward

The office market will see an accelerated flight to quality. Older buildings will become functionally obsolete or be rehabilitated for residential purposes. Newer buildings with more advanced environmental systems, better amenities, and more flexible workspaces will prosper.



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A healthy city

Trauma and recovery—the future of healthcare

Looking back

Hospitals struggled to cope with a surge in patients suffering from the novel coronavirus. Medical equipment shortages aggravated the crisis. Operating revenue declined as elective procedures were deferred. Expenses rose as critically ill patients required intensive care.

Looking forward

The omicron variant has led to an uptick in hospitalizations and renewed deferrals of elective procedures. The new variant, however, will only delay, but not derail, the recovery of the not-for-profit hospital sector.



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A global city

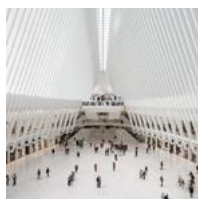
The future of tourism and entertainment

Looking back

The pandemic ended a 10-year run of growth in visitors to New York. Tourism fell abruptly as entertainment venues, sports arenas, and restaurants closed their doors. The services sector of the economy took the biggest hit in employment.

Looking forward

The city's reawakening was underway when the omicron variant triggered new mask mandates and a reversal in many return-to-work policies. However, the speed with which the tourism economy was rebounding in the fall of 2021 offers a preview of a healthy revival.



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A retail city

The future of retailing

Looking back

Employment declines in the restaurant, retail, and recreation sectors accounted for 41% of private sector jobs losses due to the pandemic. Occupancy limitations persisted even after mobility restrictions were eased. Business owners scrambled to survive.

Looking forward

Retailers are paying close attention to changing demographics. As baby boomer demand subsides, millennials and Gen Z consumers are taking precedence, continuing the trend in favor of more experiential offerings and locally sourced and made products.



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A financial city

New York's future as a global financial center

Looking back

The initial upheaval from COVID-19 had few adverse impacts on financial services. The ability to conduct business from remote locations, combined with the use of more advanced technology, allowed New York's financial institutions to operate relatively efficiently.

Looking forward

New York's preeminent position as the center of global finance will persist but operate with fewer employees as technology applications take precedence. Fintech's growth will supplant traditional business models as the lifeblood of the industry.



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An innovative city

New York and new media

Looking back

Demand for digital media content soared during the pandemic even as many content productions were suspended. The need for news on progress toward a vaccine only accelerated consumers' reliance on new media. Digital advertising revenues grew accordingly.

Looking forward

Building upon a foundation as a legacy news center, New York's role as a digital media hub will grow. The city will attract more production facilities during a golden age of content. California technology firms will have a bigger presence in the digital media landscape.



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An artistic city

An interview with Marc Spiegler, Global Director of Art Basel

External view

Looking back

New York's myriad museums and galleries were hit hard by the pandemic. Museums suspended exhibitions and turned to digital content. Many galleries closed their doors, in some cases permanently, or operated only by prior appointment.

Looking forward

As the city began to reopen, galleries found a buoyant market. Pent-up demand led to a surge in sales and successful auctions, giving credence to the notion that New York's position as a global center of the art market will continue uninterrupted.



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An educated city

The future of higher education

Looking back

Colleges and universities across the country sustained enrollment declines during the pandemic, and New York's higher education institutions were no different. The enrollment declines were concentrated among undergraduates, many of whom deferred admission.

Looking forward

The projected decline in the number of high school graduates in the northeastern US will pose a challenge for regional college admissions offices. New York is already a center of higher education, but it will become more important to the local economy over time.



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A sustainable city

New York faces climate change

Looking back

New York's physical attributes make it vulnerable to the effects of climate change. Many capital projects designed to improve the city's resiliency were deferred due to social distancing rules. Funds were reallocated to the provision of emergency healthcare.

Looking forward

The city will impose more stringent environmental standards on new construction projects, ranging from public improvements to private real estate developments. New York's capital improvement program will gravitate toward climate resiliency.

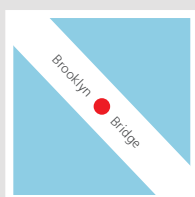




A resilient city

The future of New York's budget

Few cities in the world are imbued with a character as deeply ingrained in popular culture as that of New York. An enduring portrait is captured in the claim that if you can make it there, you will make it anywhere—a lyrical testament to the grit and resilience the city demands of anyone with big dreams of success. Resilience, of course, is an attribute the city itself has had to demonstrate time and again, and today its challenge is a debilitating pandemic. To see how it can manage the crisis this time around, some history is warranted.



The Brooklyn Bridge, which opened in 1883 and was the longest suspension bridge in the world at that time, was the site of a COVID-19 Day of Remembrance tribute to New Yorkers who lost their lives, with photos of their faces projected onto the towers. The event took place one year after the first resident of the city died from the coronavirus on 14 March 2020.

In 1975, after a decade of questionable accounting practices and unrestrained spending, and in the wake of a national recession, New York City found itself on the brink of bankruptcy. An entrenched reliance on borrowed money to pay daily operating expenses ended abruptly when investors shunned the city's bond offerings. New York's structural deficit had simply become too big to ignore. The resulting crisis prompted the New York state legislature to create an Emergency Financial Control Board to closely monitor the city's finances. Among other duties, the board was empowered to approve new borrowing plans and new collective bargaining agreements.

While the surrender of fiscal autonomy was a humiliating blow for the nation's most populous city, the crisis prompted the enactment of important financial reforms, such as the adoption of generally accepted accounting principles and statutory oversight by the state comptroller. These reforms, among others, persist to this day and have contributed to New York's revitalization by boosting investor confidence and enhancing the quality of the city's bond offerings. The New York City budget is exceedingly complex, but oversight by the Independent Budget Office, the New York State Comptroller, and the Citizens Budget Commission also make its financial statements among the most closely scrutinized.

1. Pandemic impact

As an early epicenter of the coronavirus pandemic, New York immediately felt the blow of the health crisis to the local economy. Public assistance increased, while tax receipts from economically sensitive sectors declined. For example, the number of individuals receiving cash assistance and supplemental nutrition benefits rose by 14% and 8%, respectively, in the fiscal year ending June 2020.¹ And as tourism and business travel evaporated in the wake of stay-at-home orders, the hotel sector's taxable sales dropped by more than 90% in the summer of 2020 compared to the same period in 2019. Taxable retail sales also declined abruptly in the second quarter of 2020, before rebounding.²

The city lost approximately 615,000 jobs from the fourth quarter of 2019 to the fourth quarter of 2020, and remained roughly 444,000 jobs below its pre-pandemic peak well into 2021.³ And yet, despite the massive reduction in service sector jobs, aggregate personal income increased by 4.3% in 2020 over the prior year. To some degree, the paradoxical result is due to the fact that service sector jobs were hit the hardest and are concentrated in lower-wage sectors. White collar workers with higher incomes were able to work from home more often and thereby remained employed. Substantial increases in government transfer payments, enhanced unemployment benefits, and child tax credits were also important factors in the resilient income levels.

Table 1

Pandemic response eases short-term budget challenges

Federal relief related to COVID-19, fiscal years 2021–25, in USD billions

Type of assistance	Amount
Direct fiscal relief	8.0
Education aid	6.6
FEMA reimbursements	3.3
Public health grants	1.6
Other non-categorized	0.3
Total financial assistance	19.8

Note: The City of New York expects 75% of pandemic aid to be used by the end of fiscal year 2022.
Source: NYC Office of Management and Budget; NYS Division of the Budget, Office of the State Comptroller, US Treasury, City of New York, UBS, 2021

2. New York's response

Pessimism prevailed in the spring of 2020 as the novel coronavirus overwhelmed the city's healthcare system and forced many employers to close their offices. Dire predictions regarding the city's future were commonplace. Fortunately, the sense of despair was relatively short-lived in the wake of a surge in financial assistance from Congress. As the most populous city in the nation, New York was a major recipient of federal largesse. Most of the assistance has been dedicated to education, public health, and social services (Table 1). Recent financial projections now suggest that New York will be able to forego service reductions and avoid various tax increases. This was by no means assured as recently as 24 months ago, when the Independent Budget Office predicted annual operating deficits of USD 4–6 billion.⁴ The anticipated net operating deficits through 2025 are now considerably lower but will still require the new mayoral administration to make some difficult decisions.



Investor takeaway: While the spread of the omicron variant has slowed the reopening of offices and entertainment venues in New York City and elsewhere, we expect demand for the city's municipal bonds to remain vibrant.

Table 2

City-funded expenditures

Based on New York City Financial Plan, in USD millions

Category	FY2021	FY2022	Year-over-year change	FY2025	Projected change over 4 years
Salaries and wages	20,617	20,089	-2.56%	21,424	3.91%
Pension contributions	9,302	9,788	5.22%	8,032	-13.65%
Debt service	6,129	6,604	7.75%	8,719	42.26%
Medicaid	5,687	6,444	13.31%	6,392	12.40%
Health insurance	4,855	5,551	14.34%	8,291	70.77%
Other fringe benefits	2,732	3,351	22.66%	4,033	47.62%
Energy	685	817	19.27%	876	27.88%
Judgments and claims	528	1,197	126.70%	801	51.70%
Public assistance	810	891	10.00%	891	10.00%
Other	16,897	17,828	5.51%	16,472	-2.52%
Total	68,242	72,560		75,931	

Note: Spending adjusted for surplus transfers

Source: Office of the New York State Comptroller, New York City Office of Management and Budget, UBS, as of January 2022

3. What's next

The receipt of a massive infusion of federal financial assistance was an essential component in New York's current recovery but has also disguised some of its underlying fiscal challenges. The city has not yet identified a source of recurring revenue for its planned expansion of social services, including pre-K for younger children and financial support for low-income households. Labor contracts also will pose a challenge for newly elected Mayor Eric Adams. More than one-half of the city's unionized workforce are working under lapsed contracts, and most of the remaining contracts expire by the end of the 2022 calendar year. The city does not yet appear to have set aside sufficient funds for future salary increases.⁵ The operating assumption appears to be that productivity improvements will be sufficient to offset the cost of the salary increases. To put this into perspective, a modest 2% annual increase in employee compensation would require approximately USD 1.2 billion in recurring revenue in fiscal year 2023.⁶

Fortunately, the aggregate investment return earned by the city's five pension systems has been a positive development. The system's 28.5% return on investments for the 2021 fiscal year was the best performance in two decades and is expected to allow the city to reduce its employer contributions over time (Table 2). Whether the city is able to do so, of course, will depend on market developments, but a slower rate of growth in pension contributions is a reasonable supposition. The current plan also envisions a USD 500 million deposit to the Rainy Day Reserve Fund in each of the next three fiscal years—a prudent strategy, in our view.

4. Investment implications

There is a considerable amount of uncertainty embedded in New York City's current financial plan. Much of that uncertainty revolves around the degree to which the new mayoral administration can negotiate cost-effective labor contracts in an environment where the rate of inflation was higher than anticipated. In our compendium report of New York metropolitan area credits (published 7 December 2021), we acknowledged these risks but emphasized that actual revenues had generally exceeded forecasts and that economic activity had accelerated. The speed at which the population and rents rebounded in 2021 was a striking development. While the spread of the omicron variant has slowed the reopening of offices and entertainment venues in New York City and elsewhere, we expect demand for the city's municipal bonds to remain vibrant.

New York City has encountered periodic financial challenges in the decades following its narrow escape from insolvency in 1975. For nearly 40 years, it has demonstrated a remarkable ability to reinvent itself after natural disasters, terrorist attacks, and periodic economic recessions. The pandemic certainly poses another severe challenge—but one that the city is well equipped to overcome.

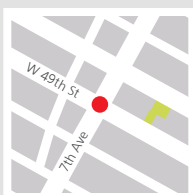




A city in motion

The future of transportation

Despite its reputation as “the city that never sleeps,” New York City went into a deep slumber after it became the epicenter of the coronavirus pandemic in the United States in 2020. Having operated without interruption for 115 years,⁷ the Metropolitan Transportation Authority (MTA) suspended subway service after midnight each evening for a thorough cleansing. Vehicular traffic slowed to a trickle at the bridges and tunnels operated by the MTA and the Port Authority of New York and New Jersey (PANYNJ). And activity came to a near standstill at the region’s three major airports: JFK, LaGuardia, and Newark. The precipitous drop in customer patronage triggered an abrupt decline in revenue, which raised concern among investors as to whether transportation agencies were capable of adjusting their operations in the face of decreased demand.



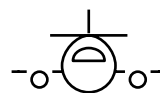
49th Street and 7th Avenue is home to one of 472 subway stations across New York City. Ridership in 2019 amounted to 5,493,875 per weekday on average. Weekday daily pandemic ridership fell to 1,208,538 in 2020. In 2021, the weekday average rose to 2,085,321, and, so far in 2022, is trending even higher.⁹



MTA operates the transit and commuter network in the New York metropolitan region, the largest in the country, serving more than 15 million people. Its primary operating segments are the New York City subway, New York City buses, the Long Island Railroad, and the Metro-North Railroad.



MTA Bridges and Tunnels, also known as Tri-borough Bridge and Tunnel Authority, is a separate public authority acting as an affiliate to (not a subsidiary of) the MTA. It operates seven toll bridges and two tunnels controlling the major crossings between New York City's five boroughs.



PANYNJ is a bistate agency for New York and New Jersey. Its key business segments are aviation (JFK, LaGuardia, Newark airports), tunnels and bridges (George Washington Bridge, Lincoln and Holland Tunnels), the World Trade Center, various port terminals, and the PATH train network.

Long-term challenges are numerous

Even before the appearance of COVID-19, the size and scope of the MTA's capital improvement program (CIP) posed a challenge for the agency. Adjusting the program on the fly in response to the pandemic was an even bigger undertaking. The decline in operating revenue forced the MTA to delay capital expenditures meant to replace obsolete infrastructure. The region's transportation backbone needed to be strengthened against extreme weather events such as Superstorm Sandy, which flooded tunnels and sections of the commuter rail system. Federal fiscal stimulus certainly helped, and the Infrastructure Investment and Jobs Act will bring more federal dollars to New York's transportation agencies. But finding adequate resources to fund all of the planned capital improvements—including those designed to fight climate change—is still a daunting task.

New York State's Climate Leadership and Community Protection Act (CLCPA) of 2019 established goals to reduce greenhouse gas emissions by 40% from 1990 levels by 2030, and 86% by 2050. While the Empire State ranks second lowest among the 50 states in terms of per capita transportation emissions, the sector still accounts for the largest share (47%) of CO₂ emissions within the state. Technological innovations have helped reduce emissions from cars, buses, and trains, but the aviation industry has lagged behind. Aviation emissions, driven by growth in enplanements, have increased by 1,000% from 1990 to 2018.⁸ For a city served by three major commercial airports, transitioning to a carbon-free transportation system will come at a significant cost, which will depend on a rebound in patronage to generate operational revenue.

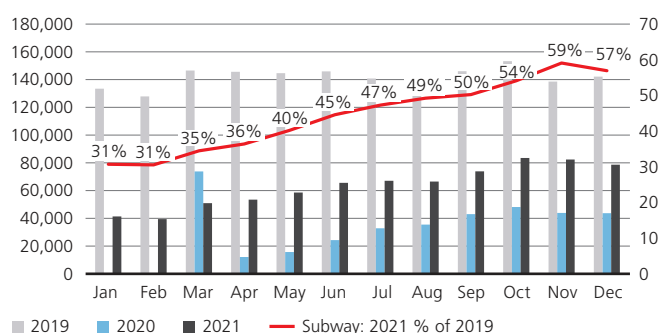
Federal fiscal stimulus made the difference

The MTA was in desperate need of the federal grants that were included in the multiple rounds of COVID relief funding. In all, it received over USD 14 billion in aid. The grants, along with their USD 2.9 billion of deficit financing, will satisfy projected operating deficits for the next 4–5 years, but the MTA still will have to modify service levels, reevaluate its CIP, and invest in new technology. Federal funding has provided the MTA with time to adjust to its new operating environment and avoid draconian service-level reductions, but ridership is only expected to return to 80–90% of pre-pandemic levels in the near term. Nevertheless, investors have reacted positively to recent developments, with spreads on MTA paper contracting significantly from their post-pandemic peak.

Figure 1

Subway ridership comparison month-over-month

Monthly ridership in thousands (lhs); % of 2019 ridership (rhs)



Source: MTA, UBS, as of January 2022

PANYNJ also benefited from federal stimulus, but not nearly to the same extent the MTA did. The aid received by the MTA is equivalent to 83% of 2019 total revenues, while the aid the Port Authority collected is roughly 13% of 2019 total revenues. Despite receiving less aid, PANYNJ continues to operate with a significant surplus, which is used to provide cash flow to a portion of its CIP. Thus far, the Port Authority has delayed some capital projects that had not yet begun construction while continuing those already under construction.

1. Pandemic impact

All modes of transportation usage—aviation, rail, and vehicular—declined dramatically at the start of the pandemic. Passenger enplanements fell by 94%, MTA ridership on the commuter rail lines and subway system were down by more than 90%, while traffic on MTA bridges and tunnels declined by 65%. Providers have seen customers return but with varying degrees of success. MTA Bridges and Tunnels is operating at pre-COVID levels, while PANYNJ enplanements have recovered about 70% of passengers. Mass transit systems have recovered more slowly, at only 55% of 2019 ridership levels. The omicron strain is expected to have a more pronounced negative impact on mass transit than it will on vehicular traffic. However, CIO views this as a temporary setback.

2. New York's response

Commuters adopted hybrid working models and avoided mass transit ridership in favor of personal vehicles, which helps to explain the bigger initial hit sustained by the MTA. The agency went to work immediately to ensure its facilities offered higher levels of cleanliness and deployed new technology, but it still encountered some resistance.

New York State, like most states and cities in the nation, requested federal aid to alleviate the financial impact caused by the pandemic. Congress responded by providing a series of stimulus measures in 2020 and 2021. The aid will act as a bridge to recovery and provide transportation agencies with time to adjust service levels and operating budgets to reflect their "new normal."

3. What's next

The emergence of the omicron variant will postpone a return to traditional office environments. Hybrid work models have become commonplace, and competition from other forms of transportation such as ride-hailing services are now permanent features of the urban landscape. The need for capital investments has not subsided in the 24 months since the pandemic began. Maintaining and expanding a more-than-century-old system is a daunting and costly endeavor.

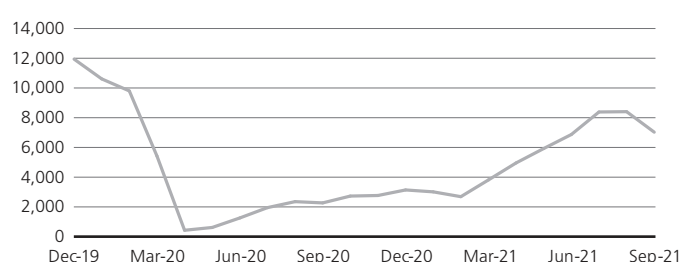
In the near term, capital improvement programs will be reevaluated for both what is required under an altered business model and what is affordable under new revenue projections. The passage of the USD 1 trillion Infrastructure Investment and Jobs Act in November 2021 will help jumpstart certain projects and alleviate some capital funding requirements.

All public transit in the United States is subsidized by other revenues, usually in the form of taxes. The MTA relies on fares more than other mass transit systems in the nation, and is negatively impacted more by the decline in ridership. The MTA is projecting passenger usage to return to only 80–90% of

Figure 2

Change in enplanements in New York area airports

In thousands



Source: Port Authority of New York and New Jersey, UBS, as of January 2022

pre-COVID levels. Therefore, in conjunction with the expected long-term reduction in usage, the MTA has discussed the need to identify new sources of revenue. Higher fares, new revenues, and increased debt load will be required to achieve its ambitious CIP and maintain fiscal balance in the future.

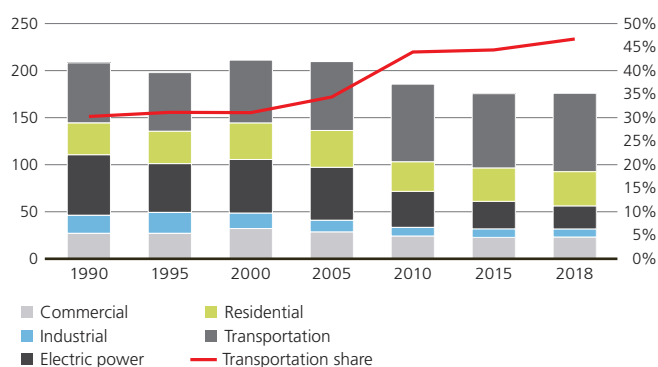
4. Investment implications

Service provided by the major transportation issuers are essential to the city's and state's economy as well as to the northeast corridor transportation network. Some issuers are more resilient than others and are better positioned to weather financial storms. Others might be better suited to manage expensive and capital-intensive improvement programs given that they have more dependable revenue streams. By and large, however, CIO believes that the services provided by New York's transportation agencies are critical components to the urban landscape, and their resilience is often underestimated. Exogenous shocks, such as COVID-19, tend to widen credit spreads and provide buying opportunities. Assuming customer usage continues to recover from pandemic lows, recent volatility aside, CIO believes some issuer spreads have room to compress further.

Figure 3

Total New York state emissions by sector, and transportation share of total emissions, 1990–2018

CO₂ emissions in metric tons (lhs); share of total emission (rhs)

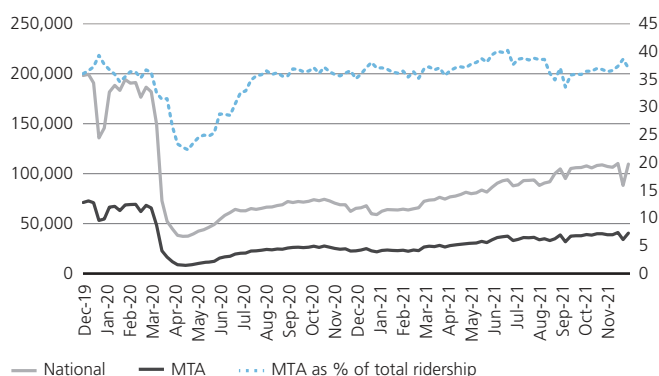


Source: US Department of Energy, Energy Information Administration, "New York CO₂ Emissions API Query Browser" (accessed 27 October 2021)

Figure 4

MTA ridership accounts for almost 40% of all transit customers in the US

Number of customers in thousands (lhs); MTA as % of total ridership (rhs)



Source: American Public Transportation Association Ridership Trends, <https://transitapp.com/apta>

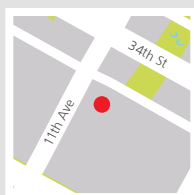




A city at rest

The future of residential real estate

Residential real estate was one of New York's hardest hit sectors in the wake of COVID-19. Seemingly overnight, a bustling metropolis resembled a scene from a post-apocalyptic movie, with streets devoid of activity. Boarded-up storefronts and a near total shuttering of the city's famous nightlife cast a pall over the Big Apple. Many residents fled for shelter in lower-density or lower-cost and less restrictive locations. Ominous reports regarding the future of the city's residential property market were commonplace. Fortunately, the market has proven to be more durable than many believed.



Hudson Yards was the most expensive neighborhood in New York in 2021. The median sale price of homes in this area reached a whopping USD 4,354,000 in 3Q21. TriBeCa was the runner up, with a median sale price of USD 3,350,000.¹¹

1. Pandemic impact

The impact on the residential sector was swift and painful, as the following statistics can attest:

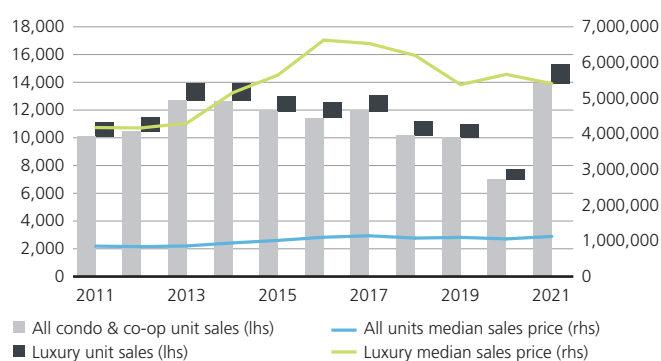
- Between 2019 and 2020, unit sales of condo/co-op and luxury-priced condo/co-op properties declined 29.5% and 27.4%, respectively (Fig. 1).
- Between the fourth quarter of 2019 and the third quarter of 2020, the months of supply of condo/co-op units ballooned by 141%, to 17.1 months from 7.1. Luxury-priced condo/co-ops fared almost as poorly, as months of supply jumped 102% from 17.1 to 34.5 (Fig. 2).
- In the rental market, median rents declined 19% between April 2020 and November 2020 (Fig. 3, next page). Despite the drop in rental rates, vacancies jumped by more than 9 percentage points to 11.6% by April 2021¹⁰ (Fig. 4, next page).

As a result of the severe drop-off in rental activity, landlords substantially increased the use of concessions—generally in the form of free rent—as rents and occupancy declined. The number of months of free rent went from a low of 1.1 to a citywide average of 2.3, but our numerous conversations with public and private landlords revealed concessions as high as three or more months at the lowest points of demand.

Figure 1

NYC unit sale and median price trends

Unit sales (lhs); median price in USD (rhs)

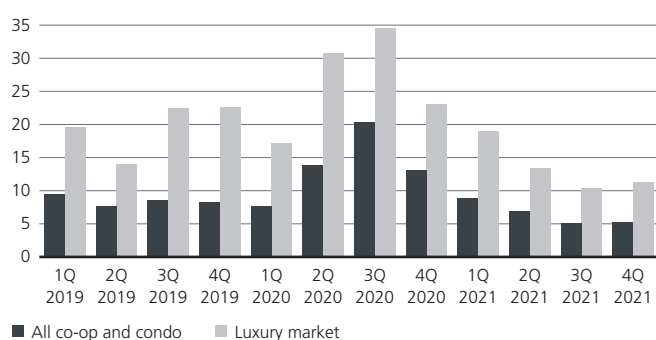


Source: Miller Samuel, The Elliman Report, UBS, as of December 2021

Figure 2

Months of supply trends

2019–21



Source: Miller Samuel, UBS, as of December 2021

2. New York's response

New Yorkers responded to the pandemic in quintessential fashion—quickly and decisively. The necessity for more work-space at home, particularly for families with younger children, led some residents to buy or rent homes in suburban Westchester, Long Island, New Jersey, and Connecticut. Some moved back in with their parents or sought rentals outside of Manhattan. Others relocated to warmer climates with a lower cost of living and fewer mobility restrictions.

Regardless of the immediate reaction, one myth about the outmigration from New York City needs to be dispelled. While it is true that “panic homebuying” outside the city surged in the early days of the pandemic, and that New York state as a whole has been losing population for the past 10 years, the residential market is far more resilient than commonly believed. We think the pessimists who called for the end of residential demand for New York City overlooked several key factors.

First, mail-forwarding data from the USPS shows that much of the outmigration was destined for the tristate area as opposed to faraway regions. The close proximity of these geographic nomads made moving back to the city relatively easy. Second, the major attractions that have made New York such a desirable place to live—from Broadway and ballet to restaurants and nightclubs—were practically shuttered. It made logical sense for apartment sales to decline as potential buyers assessed the duration and impact of the pandemic, while renters who were able to maintain their jobs and work remotely took advantage of the savings associated with living outside Manhattan.

Third, a number of the people who left the city were fortunate enough to own second residences in beach or mountain communities. As such, their exodus is unlikely to be permanent in all cases. And fourth, although more difficult to quantify, we believe a number of people who elected to move their full-time residency to lower-cost, warmer states will ultimately decide that maintaining a secondary residence in New York is critical either for their business or social needs.

3. What's next

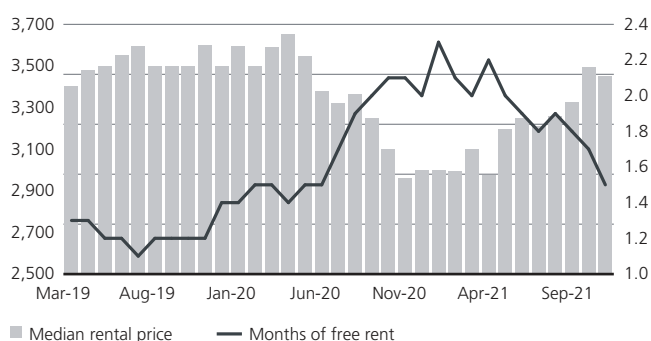
As we have highlighted, New York has been counted out many times before—to the detriment of the naysayers. We do not dispute that New York faces a number of challenges, including a high cost of living, quality-of-life issues, and the uncertainty over return-to-office protocols. But renters and potential buyers have responded rapidly to the bargains arising from the weak residential market in 2020 and early 2021.

The rebound in both rentals and sales, even in the luxury end of the market, has been nothing short of stunning. Average rents hit an all-time high on 13 January 2022; vacancy is approaching pre-pandemic lows; and available inventory has declined precipitously. The rally in sales activity has been equally impressive. Unit sales of condo/co-ops increased 98% on a calendar year-over-year basis, while sales of luxury condo/co-ops rose 93% over the same time frame. The sales figures represent a 10-year high for condo/co-ops unit sales for the entire market as well as the luxury market.

Figure 3

NYC median rent and months of free rent trends

Median rent in USD (lhs); months of free rent (rhs)



Source: Miller Samuel, The Elliman Report, UBS, as of November 2021

The pandemic will ultimately fade into the rearview mirror. As New York's social and entertainment venues reopen, we expect increased demand, making New York's residential real estate market relatively attractive. We are not forecasting a continuation of the torrid pace seen in recent months, given the rebound in sale prices and rents, but graduating college students, downsizing suburban empty-nesters, and foreign buyers are likely to return. As the pandemic dissipates, we expect to see solid demand for residential real estate over the next three to five years.

4. Investment implications

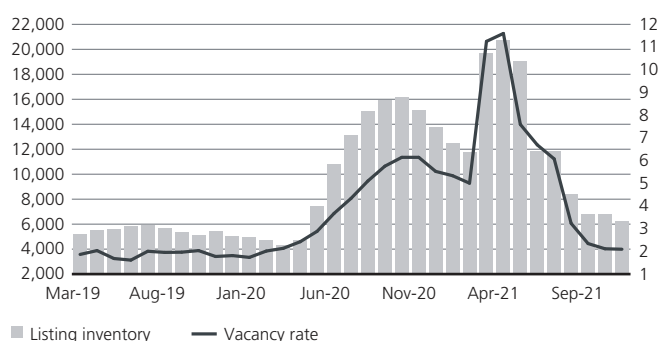
Policy considerations are a critical component in any discussion of New York real estate, and legislation, either at the state or the city level, can affect investment returns. Finding common ground on solutions has become much more challenging over time. For example, while there is a broad consensus that New York has an extreme shortage of affordable housing, developers and housing advocates often disagree on solutions to the problem.

- Statewide rent-control measures implemented in 2019 for rent-controlled and regulated apartments, as well as apartments receiving development tax benefits, were largely tilted in tenants' favor. Landlords face hurdles as they try to recoup the costs of maintenance and repairs and in marking rents to market whenever tenants vacate a unit. If landlords are unable to make reasonable economic returns on their investments, the risks of these buildings falling into disrepair, as well as reduced investor or developer interest in the market, increase.
- The "good cause" eviction bill has been widely debated in Albany for several years. Despite its benign-sounding name, passage of the bill would effectively result in de facto statewide rent control for all rental units. Several municipalities have already approved good-cause eviction policies, but it is unclear if the bill has enough support in the state capital, particularly given the recent change in the governor's mansion. Should good-cause eviction pass in its current form,

Figure 4

NYC listing inventory and vacancy rate trends

Listing inventory (lhs); vacancy rate in % (rhs)



Source: Miller Samuel, The Elliman Report, UBS, as of November 2021

we believe it will result in a significant disincentive for capital investment.

- Two key tax provisions to encourage developers to build affordable housing—the 421-a and J-51 programs—are due to expire in June 2022. We believe an extension of these programs is crucial for the affordable housing industry and the conversion of existing obsolete office buildings and hotels. There is significant opposition at the city and state level from a number of more progressive lawmakers to extend these programs.
- Governor Kathy Hochul has proposed removing the state's limit on residential density and changing the zoning to spur the conversion of office and hotel assets into housing. This is currently in the proposal stage, and details have been scant. In our view, removing artificial density and floor-to-area ratio limitations will help alleviate the affordable housing shortage that currently exists.
- In December 2021, the New York City Council voted overwhelmingly to pass a ban on natural gas lines to, and gas-fired appliances and boilers for, all buildings six or fewer stories beginning 31 December 2023, and then for all buildings seven stories or more beginning at the end of 2027. The bill requires these buildings to supplant natural gas with electric. In addition, the bill tasks the mayor's office with analyzing and reporting on the use of solar-powered and geothermal heat pumps, as well as electric water heaters which will likely need to be installed in each unit, thus raising construction costs.

We are optimistic about the residential real estate market in New York but acknowledge that the relatively high cost of living and tax rates in the city are recurring challenges. The cap on state and local tax deductions also could deter buying activity, particularly at the high end of the market. The new mayoral administration appears focused on resuscitating New York's hard-won reputation as a safe city with opportunities for entrepreneurs to succeed. To the extent Mayor Adams is successful in doing so, the residential real estate market will remain a lucrative opportunity for investors.

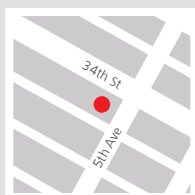




A city at work

The changing nature of work and its impact on commercial real estate

New York has more office space than any other city in the United States, an amount equivalent to 11% of the total office inventory in the entire country. The city's commercial business districts also are remarkably dense, with most of the office buildings concentrated in finite areas of Manhattan and downtown Brooklyn. The net result is a city with approximately 1.5 million square feet of office space per square mile.¹² The population density historically provided its workers and residents with extraordinary advantages. Commerce could be conducted quickly and efficiently, and the social scene was arguably unrivaled. Unfortunately, the advantages provided by population density turned into liabilities as the fear of contagion remained paramount until vaccines were developed.



The **Empire State Building** was the tallest in the world from 1931 to 1970 and is so large that it was assigned its own ZIP code. The landmark building contains 2.7 million square feet of office space, with LinkedIn as its biggest tenant. LinkedIn, like many businesses throughout the city, has adopted a hybrid workplace despite holding leases on more than 10 floors.

1. Pandemic impact

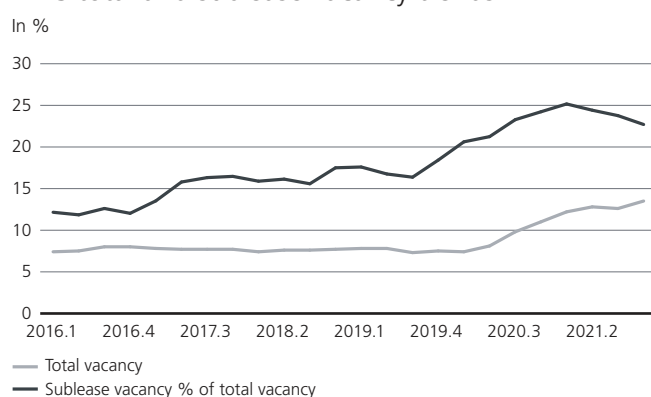
The novel coronavirus had a swift and devastating impact on New York's commercial real estate (CRE) market. Abrupt closures and the imposition of mobility restrictions led to a massive decline in the physical occupancy of office buildings throughout the city. Most office workers began to work remotely in March 2020 and remained at home for months thereafter. According to Kastle Access Control Systems data, physical office occupancy declined to 12% on 16 December 2020 from above 90% prior to the arrival of COVID-19.

The office market vacancy rate increased from 7.5% in 4Q19, prior to the pandemic, to 13.5% in 4Q21, while the sublease percentage of total vacancy increased from 12.6% to 22.7% over the same period (Fig. 1). The total vacancy of sublease space for all classes of office stock increased from 20.6% in 1Q20 to 22.8% in 4Q21, after hitting a high of 25.2% in 1Q21 (Fig. 2). Interestingly, sublease vacancy for class A office space began to decline in 2Q21 but continued to increase for class B and C quality space.

After posting positive net absorption of 6.9 million square feet between 1Q19 and 1Q20, the New York office market experienced negative net absorption of 21.6 million square feet between 2Q20 and 4Q21 (Fig. 3, next page). The cost of leasing—in terms of free rent and tenant improvement (TI) dollars—also increased significantly. As the data in Fig. 4 on the next page illustrates, the number of months of free rent per term of lease and TI dollars increased substantially in 2020 and 2021. The increase in TI costs for leases with rents more than USD 100 per square foot is particularly noteworthy.¹³ In short, landlords are having to pay more to get and keep tenants in their buildings.

Figure 1

NYC total and sublease vacancy trends



Source: CBRE Econometric Advisors, UBS, as of 4Q21



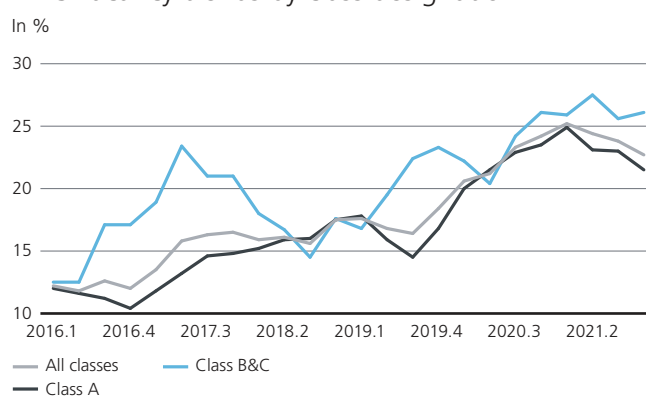
Investor takeaway: The international buyer has been noticeably absent during the pandemic, but we expect to see a broadening of the investment landscape in CRE as New York remains one of the most important business, investor, and tourist destinations in the world.

The availability of retail space, often on the ground floor of office buildings, increased almost 6 percentage points between 4Q19 and 3Q21, to 25.9%. However, this does not provide a complete picture, as some of the most expensive retail corridors experienced significantly larger increases in availability over this time period.¹⁴ The increase in social unrest during 2020 also added to the challenges faced by retail tenants in some neighborhoods. On a positive note, some of the areas that were adversely affected by these trends have seen a decline in availability over the past nine months.¹⁵

While the challenges posed by empty offices received much of the ink, the hotel sector was also hit hard. Average hotel occupancy decreased from 77% in February 2020 to 34.5% in just one month and remained in the mid-30% range for a majority of 2020. In addition, in that same one-month period, the average revenue per available room (RevPAR) declined from USD 139 to USD 62. On a positive note, Manhattan hotel occupancy and RevPAR have recovered to 66% and USD 160, respectively, as of October 2021.

Figure 2

NYC vacancy trends by class designation

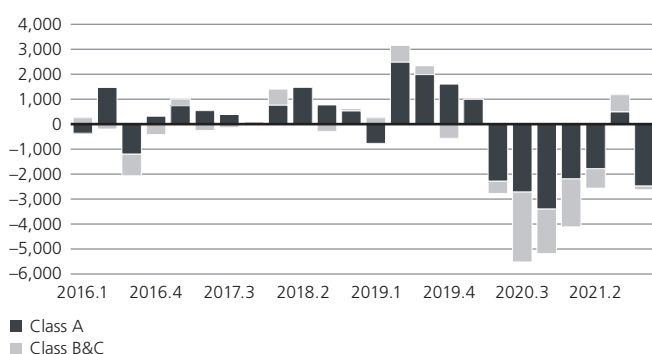


Source: CBRE Econometric Advisors, UBS, as of 4Q21

Figure 3

NYC office quarterly net absorption trends

In thousands of feet (SF)

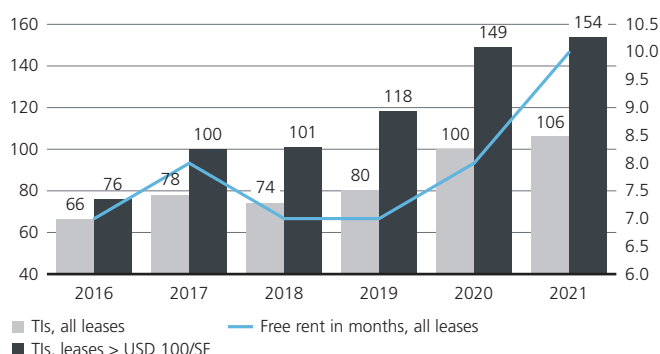


Source: CBRE Econometric Advisors, UBS, as of 4Q21

Figure 4

NYC office tenant improvement and free rent trends

TI in USD/SF (lhs); free rent in months (rhs)



Source: CBRE, Avison Young, UBS, as of December 2021

2. New York's response

The hotel industry's relationship with the city government during the pandemic was mixed and best characterized by dynamic tension. On the one hand, former Mayor Bill de Blasio signed an executive order on 19 May 2021 that eliminated the 5.875% hotel room occupancy tax between 1 June and 31 August 2021. The order was designed to help hotels keep their doors open, retain jobs, and provide for a more stable economic footing.

On the other hand, the de Blasio administration passed a law in October 2021 that forced hotels that either closed or laid-off 75% or more of their staff to pay out-of-work service employees USD 500 per week for up to 30 weeks. The Hotel Association of New York City argued that the measure circumvented state and federal law. Politics and regulation are a crucial part of the CRE calculus in New York, and the prior gubernatorial and mayoral administrations were viewed as not particularly sympathetic to developers and landlords. The Hochul and Adams administrations will be obliged to address the current regulatory framework as New York recovers from the pandemic. This is crucial given the importance of real estate to New York's economy, tax base, and employment.

Despite the occasional friction between the private sector and local governments, the phrase "in a New York minute" was never more applicable. Employers rapidly embraced the concept of remote work whenever possible and used virtual meetings in lieu of having a physical presence in the office. Many building owners, particularly those who own higher-quality buildings in better locations, began upgrading air filtration systems and installing touchless controls. Employers reconfigured office plans to provide for social distancing and expanded the size of meeting rooms. Employee access was tightly controlled, and hybrid work schedules were adopted. As our interview with Marguerite Mariscal (page 34) indicates, many restaurants engaged in different types of experiments to remain viable, from outdoor dining to the development of "ghost kitchens" in shuttered restaurants to accommodate takeout and delivery demand.

3. What's next

The death of New York's commercial real estate market has been predicted any number of times. Look no further than the city's brush with bankruptcy in the 1970s, the S&L crisis, the tech bust, 9/11, and the global financial crisis. Although each period had its unique challenges, we believe it is once again premature and erroneous to write the New York CRE epitaph. The post-COVID world will invariably lead to several structural changes that will force employers, employees, and city officials to improvise and adapt—something that historically has been one of the key strengths of New Yorkers over many generations.

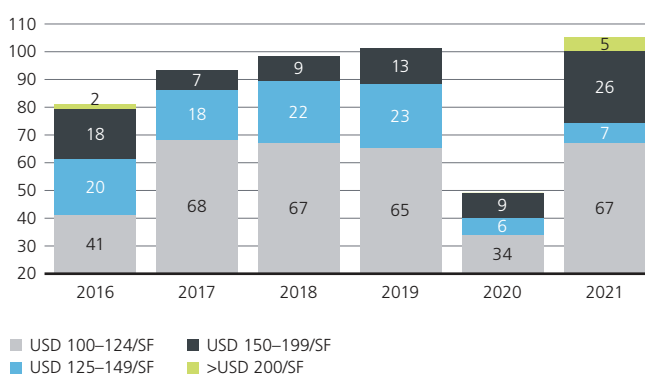
We continue to believe the office will remain the prime hub for collaboration, innovation, culture building, mentoring, business development, fostering new relationships, and teamwork. In our view, technology, despite its success as a stopgap during the pandemic, is not a permanent substitute for personal interaction. That said, we do believe there will be several structural changes in the way office workers interact.

- Many companies are likely to operate some form of hybrid schedule on a more permanent basis, allowing employees more flexibility in their in-office schedule. While this could lead to a reduction in office space needs, we expect the de-densification of office space and the need for more and larger open and collaborative space to offset a portion of any potential reduction in office space needs.
- We expect a flight to quality by tenants to either new or renovated buildings, particularly those located near major transportation hubs. Despite higher occupancy costs, these buildings offer the key amenities deemed important in a post-COVID world. The trend has already begun and is evidenced by the data contained in Fig. 5, which shows a significant uptake in the number of leases signed above USD 150 per square foot in 2021. The key beneficiaries will be those owners of newer, more modern office properties that represent a smaller percentage of Manhattan's office space. The average age of a Manhattan office building is 68 years, with 46% having been built pre-World War II and another 30% prior to 1980. In fact, only 10% of Manhattan's roughly 450 million square feet of office space was constructed after 2000.
- The flight to quality will likely render a significant number of older buildings functionally obsolete in a post-COVID world. Given the significant shortage of affordable housing in New York, a logical use for many of these buildings would entail conversion to residential properties. In addition to helping ease the affordable housing challenges in the city, it would help reduce the density of the office stock. As such, we believe it is imperative the J-51 tax exemption and abatement program remain in place to further incentivize the office-to-residential conversion.
- Companies will likely continue to move their support operations to lower-cost cities. Although not a new phenomenon, the combination of the relatively high cost of New York real estate and the growing number of people who are choosing to live in less dense cities could accelerate the exodus.

Figure 5

NYC leases signed exceeding USD 100/SF

Number of leases signed



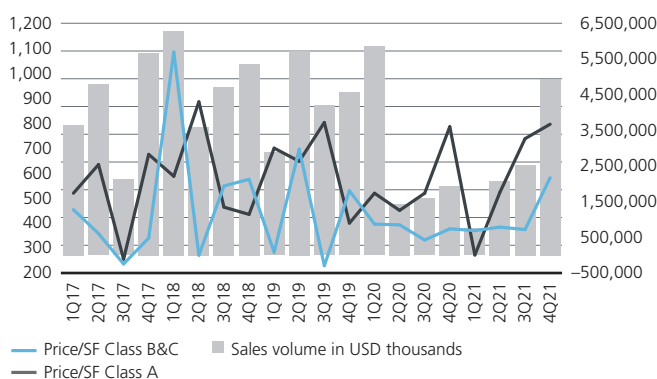
Source: CBRE

- There appears to be a trend in the industry toward management agreements whereby flex office providers act as an operator/manager of the space without incurring a long-term, fixed lease obligation. Using this flexible office model, a building owner and flex operator would engage in a revenue-sharing arrangement, something that would align the interests of both the owner and the operator in a more capital-efficient manner. Clearly, this is a model that building owners could employ themselves—and some already have. That said, the ability of brand-name flex companies to offer turnkey solutions is something that could be very appealing to larger corporations, particularly those that are contemplating a hybrid strategy but do not want their employees working exclusively from home. Flex space also could be utilized for “all hands” meetings whenever companies want to convene a temporary assembly of all employees.
- New York’s office market historically has been dominated by those tenants in the FIRE (finance, insurance, and real estate) industries. Although the FIRE sectors still account for a substantial portion of the city’s office leasing—approximately 36% in 2021—the technology and life sciences sector has emerged as a key driver of office leasing and buying. In 2021 alone, according to Jones Lang Lasalle, the TAMI sector (technology, advertising, media, and information) accounted for approximately 30% of the leasing activity in the city. Given the city’s highly educated and diverse workforce, we believe the TAMI sector will continue to be a growing consumer of New York’s office market.
- The office market is one of the largest contributors of carbon emissions around the globe. To that end, the de Blasio administration passed the Climate Mobilization Act in 2019 to reduce greenhouse gas emissions (GHG) by enacting carbon emission limits for certain commercial properties. Buildings that are larger than 25,000 square feet, non-city owned buildings, and non-rent regulated properties must begin reducing their carbon emissions by 2024. Stricter limits take effect in 2030. The law targets GHG emission reductions of 40% and 80% by 2030 and 2050, respectively. Noncompliant building owners will be subject to fines of USD 268 per metric ton for GHG emissions in excess of established limits beginning in 2024. We believe that new and more recently renovated buildings are much more likely to be in compliance, and this is yet another factor supporting our flight-to-quality thesis.

Figure 6

NYC price per square foot by class designation and total office sales volume

Price/SF (lhs); sales volume in USD thousands (rhs)



Source: CBRE Econometric Advisors, Real Capital Analytics, UBS

4. Investment implications

New York has been one of the most active CRE investment markets, particularly for trophy and class A office buildings. Not surprisingly, investment volumes declined precipitously during 2020 as the uncertainty associated with COVID-19 diminished investor appetites. While there is still considerable uncertainty as to when we can return to normal lives, the increasing number of people getting vaccinated and the willingness of federal state and local governments to avoid mass shutdowns should lead to a further opening of all that New York has to offer. This is beginning to show up in office transaction volumes, particularly in the last three quarters of 2021 (Fig. 6).

Office transactions have already staged a significant rebound from the nadir reached in 2020, with class A properties showing particular strength. One caveat to this recovery is that of the 69 office transactions that occurred in New York in 2021, nine of them accounted for 80% of the total transaction volume. Although this supports our flight-to-quality argument, the transaction market needs more breadth and depth. The international buyer has been noticeably absent during the pandemic, but we expect to see a broadening of the investment landscape in CRE as New York remains one of the most important business, investor, and tourist destinations in the world.

As an ancient proverb says, a journey of 1,000 miles begins with a single step. Perhaps the positive net absorption in office space witnessed in 3Q21, after five straight quarters of substantial negative net absorption, portends that important first step.



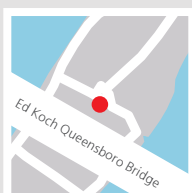


A healthy city

Trauma and recovery—the future of healthcare

The extraordinary financial assistance from the federal government and increasing vaccination rates have contributed significantly to the partial recovery of not-for-profit hospitals across the country. However, key challenges remain. In the short term, a shortage of medical personnel, especially nurses, and rising cost pressures will keep margins depressed. While the rapid spread of the omicron variant is posing challenges for health-care providers nationwide, hospitalizations in New York are now decreasing after peaking in early January.

The healthcare industry is one of the major economic sectors of New York City, providing employment to over half a million residents. Six large hospital systems operate in the New York City area, and their ability to navigate the crisis will have a profound impact on public health (Table 1, next page). Investors should take note; collectively, these hospitals have more than USD 16 billion of debt outstanding.



Roosevelt Island, known as Welfare Island from 1921 to 1973, has historically been used primarily for hospitals, although it is more gentrified today. NYC Health and Hospitals opened a 350-bed temporary facility on the island within one month of the city's first reported case of COVID-19, expanding hospital bed capacity as New York became the epicenter of the pandemic. Shown in this picture is the tramway to Roosevelt Island as it leaves the station in Manhattan.

Table 1

The six largest hospital systems operating in New York City

Hospital system in NYC area	Description	Debt (USD billion)
Memorial Sloan Kettering Cancer Center	Leading provider of cancer care in the nation, 514 beds	3.0
Mount Sinai Hospital	8 hospital campuses, 3,808 beds, 410 ambulatory locations	1.1
NewYork-Presbyterian Hospital	10 hospitals at 7 campuses. Affiliated with Cornell University and Columbia University	4.2
Northwell Health Inc	21 hospitals, 550 ambulatory centers, 3 long term care facilities	4.1
NYU Langone Hospitals	4 campuses, 1,500 beds. Affiliated with New York University School of Medicine	3.3
NYC Health and Hospitals	11 hospitals, largest public hospital system in New York state	0.7

Source: Merritt Research, UBS, as of 16 December 2021

1. Pandemic impact

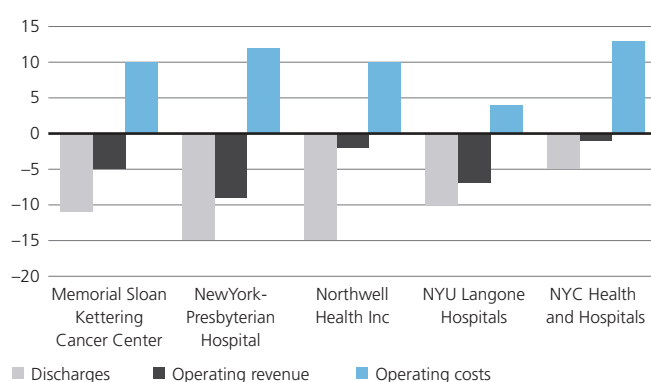
The not-for-profit hospital sector was hit particularly hard in 2020 as COVID-19 severely disrupted economic activity in the country. As the pandemic intensified in the first half of the year, New York City and the greater tri-state area quickly became the epicenter of the crisis. Cases, hospitalizations, and deaths surged. Hospitals struggled to cope with the sudden operational pressures, especially with regard to a shortage of beds, ventilators, and other protective equipment.

Financially, hospitals were hit from both sides. Revenues declined with the cancellation of elective procedures, while operating costs rose due to the logistical challenges posed by the massive influx of critically ill patients (Fig. 1). The net result was a significant compression in operating margins. Before the pandemic, profitability of the not-for-profit hospital sector was already under pressure, driven by a shift in payor mix from private to government insurance. COVID-19 drove margins to a decade low of 1.5% in 2020 from 2.5% in 2010.

Figure 1

The pandemic created revenue and expense pressures

Percent changes 2020 vs. 2019



Note: Mount Sinai is not shown as it has not released audited data for 2020
Source: Merritt Research, UBS, as of 16 December 2021

2. New York's response

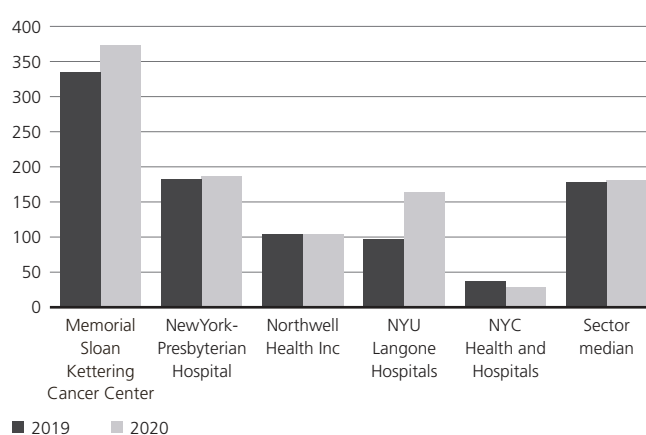
The first case of COVID-19 in New York City was confirmed on 1 March 2020. As the pandemic raged across the city, hospitalizations increased dramatically. A state executive order required hospitals to increase bed capacity, which forced hospitals to defer or cancel elective procedures to make room for COVID patients. New York City launched the Test and Trace Initiative, one of the largest testing and contact-tracing programs in the country.

In the wake of the unprecedented crisis, Congress provided USD 175 billion of financial assistance to the healthcare sector through the CARES Act, the Paycheck Protection Program and Health Care Enhancement Act, and others. The extraordinary amount of fiscal stimulus helped ease the liquidity strain on hospitals. Liquidity (as measured by days cash on hand) is arguably the most important driver of credit quality over the near term. While there is considerable variation in liquidity between hospitals relative to the sector median, the fiscal assistance

Figure 2

Federal fiscal assistance helped maintain liquidity

Days cash on hand 2020 vs. 2019

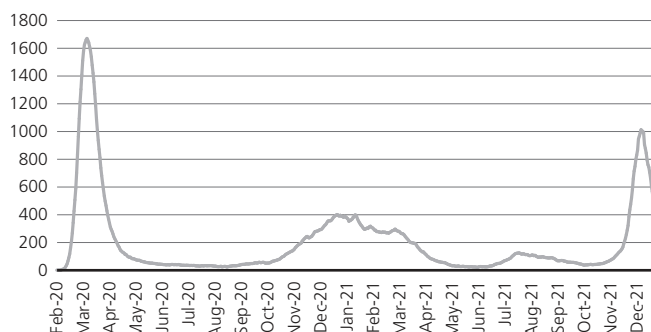


Source: Merritt Research, UBS, as of 16 December 2021

Figure 3

Hospitalizations rise as omicron variant spreads rapidly

Seven-day average number of hospitalizations in NYC



Source: NYC Health, NYC.gov, UBS, as of 4 January 2022

helped the sector to maintain or even improve their liquidity position compared to pre-pandemic levels (Fig. 2, previous page). NYC Health and Hospitals, which is facing significant financial challenges, has traditionally operated at lower levels of liquidity and relies heavily on significant financial support from the federal, state, and city governments.

3. What's next

The rapid spread of the omicron variant remains a key risk factor in the near term. Hospitalizations increased rapidly over the last three months but remained well below 2020 peak rates and are now declining. (Fig. 3). High vaccination rates (73% of the city's resident population is fully vaccinated), combined with the lower severity of the variant, have undoubtedly helped. According to state data, as of 23 January, New York City had 3,467 beds available out of a total 15,573 (22% availability), but capacity constraints are expected to ease over the next several weeks. The shortage of medical personnel, especially nurses, however, will continue to exacerbate near-term operational challenges.

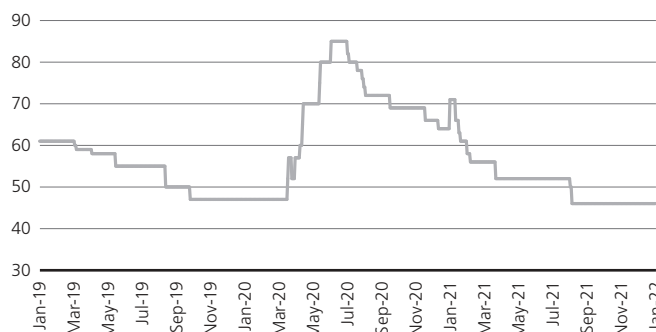
While 40 hospitals in upstate New York were ordered by the governor to defer elective procedures due to less than 10% bed availability, New York City hospitals have been spared. Elective procedures were nearing their pre-COVID levels, and omicron will delay, although not derail, that recovery. While the risk of the evolution of a more transmissible and severe variant cannot be ignored, greater vaccinations and natural immunity will provide some degree of mitigation and protection.

Over the next few years, we believe the overall outlook for hospitals presents a mixed picture. We see a recovery in patient volumes through 2023. However, margins will face downward pressure as expense growth outpaces revenue growth.

Figure 4

Not-for-profit hospital bond spreads tighter than pre-pandemic levels

10-year A rated hospital bond spread to 10-year AAA GO bonds, in bps



Source: Thomson Reuters, UBS, as of 5 January 2022

Although inflation is expected to moderate, cost pressures (especially relating to medical personnel) will persist. At the same time, an ongoing shift in payor mix toward government insurance (which has lower rates of reimbursement than private insurance) will pose revenue challenges. The adoption of risk-based pricing in lieu of the traditional fee-for-service payment models will present both opportunities and challenges. The digital transformation of the healthcare sector is already underway and will be a key differentiator of credit quality.

Healthcare facilities with advanced capabilities such as Memorial Sloan Kettering Cancer Center, NewYork-Presbyterian Hospital, and NYU Langone are well positioned to navigate challenges and exploit opportunities. Northwell, with its moderate liquidity position, could face some challenges, but its large scale should provide it with significant resilience. Liquidity-strained hospitals with more commoditized offerings, such as NYC Health and Hospitals, could face significant financial hurdles.

4. Investment implications

Conservatively positioned investors have always been somewhat wary of the healthcare sector given its higher incidence of historical defaults compared to other major municipal sectors. However, healthcare has also delivered superior long-term returns (albeit with greater volatility) and deserves a place in investor portfolios. That said, after a solid rally in the municipal market since March 2020, hospital bond spreads are now tighter than pre-pandemic levels, so careful credit selection is essential (Fig. 4). We prefer hospital systems that exhibit strong liquidity, reliable cash flow, and a diversified revenue mix. Please refer to our *CIO Municipal Risk Framework* report titled "Not-for-profit hospitals" published November 2021 for more information.



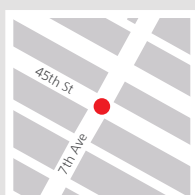


A global city

The future of tourism and entertainment

Of the best-known destination cities of the world, New York is perhaps unparalleled for its vibrant dining scene and round-the-clock entertainment. Its top concert venues attract the biggest names in the music industry, and its restaurants offer cuisines from over 150 countries¹⁶—some of the major draws for both residents and travelers. In 2019, the city attracted about 66.6 million visitors, who generated over USD 47 billion in tourism spending,¹⁷ of which roughly half was spent on lodging, food, and beverage (Fig. 1, next page).¹⁸

Tourism is one of the backbones of New York's economy, and attracting visitors back to the city will be critical to its recovery. The city has faced hardship in the past, but the COVID-19 pandemic ground New York's thriving entertainment scene to a screeching halt. Today, the city's hospitality industry faces the difficulties of rising food and labor costs, even as it strains under the burden of accrued pandemic-related debts. Despite the remaining challenges, signs of the city's comeback are starting to emerge.



Times Square is one of the world's most popular tourist attractions, drawing an estimated 50 million visitors annually before the pandemic. All of New York City attracted about 66.6 million visitors in 2019, but that number fell 67% in 2020, ending a 10-year period of record tourism growth.

1. Pandemic impact

The tourism and entertainment industries were among the hardest hit by the COVID-19 pandemic, with strict and enduring economic restrictions forcing many small businesses to permanently close their doors across the five boroughs. Sporting arenas and music venues shuttered, Broadway suspended performances, and restaurants served takeout only.

The pandemic ended a 10-year period of record tourism growth, with the number of visitors in 2020 falling 67%—including the period before severe restrictions were imposed.¹⁹ The hotel industry in Manhattan shed 46% of its labor force in 2020, and, as of January 2022, the restaurant subsector in New York City still employs 30% fewer workers than it did in 2019.²⁰

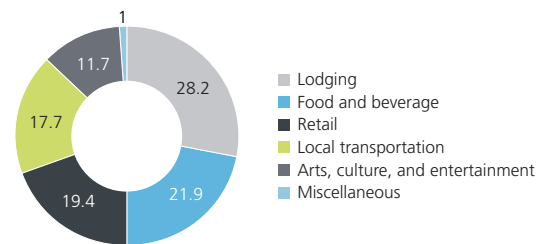
2. New York's response

Not long after the outbreak of the pandemic, the Coalition for NYC Hospitality & Tourism Recovery released a plan to revitalize the tourism industry. Entitled “All in NYC: The Roadmap for Tourism’s Reimagining and Recovery,” it mapped out three stages: Rise, Renew, Recover. The first stage, Rise, was relatively brief and emphasized the use of digital channels to engage consumers and promote virtual content. The Renew phase, set for the summer of 2020, relied heavily on outdoor activities and shifted the campaign’s focus toward encouraging domestic travelers back to physical locations. The “Open Streets” dining program launched in June, allowing restaurants to serve customers on dedicated streets. This phase also supported outdoor public art initiatives, turning the city’s streets into public theater. The third stage, Recover, was intended to mark the city’s full reopening. However, the case surge in late 2020 resulted in the reimposition of mobility and capacity restrictions. Restaurants were told to close indoor dining again, and New Yorkers took to the streets for their meals once more—regardless of the weather.

Figure 1

Share of total tourism spending by category, 2019

In %



Source: NYC & Company, OSC analysis, UBS, as of 2019

Throughout each of these phases, businesses were forced to innovate, reassess, and readapt. One common denominator throughout each industry’s response was the reliance on digital channels to keep itself afloat. Cocktail bars taught online classes, museums hosted virtual tours, and music venues staged virtual concerts. Eleven Madison Park, once voted the “World’s Best Restaurant,” transitioned to donate thousands of meals a day during the height of the pandemic, and then reopened with a plant-based menu. By October 2020, over a dozen new vegan or vegetarian restaurants had opened since the start of the pandemic.²¹ Plant-based options offer an additional way to reach new customers, and while they are a small slice of the total market, growth in plant-based dining was one surprising aspect of the industry’s pandemic pivot.



On pages 34 and 35, hear from Momofuku CEO Marguerite Mariscal on how the company adapted post-pandemic, and what major trends will shape the New York restaurant industry going forward.

3. What's next

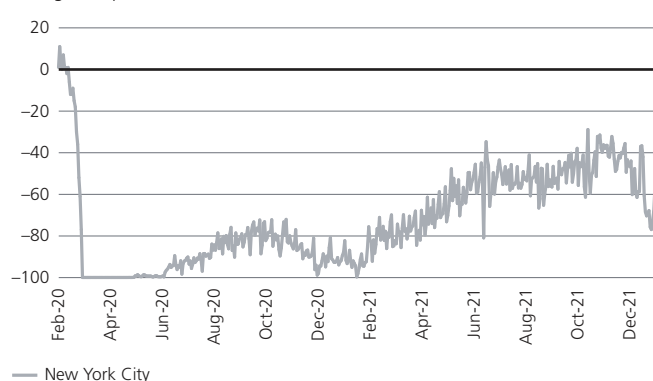
The “NYC Reawakens” tourism plan allocated USD 30 million for spending on tourism initiatives. The marketing campaign is focused on highlighting the city’s cultural attractions, new hotels, and newfound outdoor dining scene. Still, it will likely be a long path forward. The city’s tourism agency estimates visitor spending to reach 2019 levels by approximately 2025, but it is difficult to quantify how much of a delay the recent omicron wave will cause.

There are reasons to be optimistic, however. In the years leading up to 2020, US consumer spending was shifting away from goods toward spending on new experiences, and we expect this pattern to resume as consumers return to pre-pandemic activities. Unfortunately, the omicron variant arrived during the holiday season, a key revenue driver for the hospitality and tourism industries. The variant’s impact can be seen in the subsequent drop in OpenTable reservations during the latter half of December 2021 (Fig. 2). Prior to the spread of the new variant, reservations were still well below 2019 levels, but the upward trajectory of the recovery in table bookings was evident.

Figure 2

Dining reservations had begun to recover from pandemic lows, but fell again during omicron surge

Change in OpenTable reservations vs. 2019 levels, in %



— New York City

Source: Bloomberg, OpenTable, UBS, as of 17 January 2022

The recovery in lodging will be even more reliant on the return of visitors, relative to dining and other attractions buoyed by local residents. Domestic leisure travelers make up the bulk of the city’s visitors, but international travelers typically spend more—almost four times as much, based on 2019 data—and are more likely to need accommodations compared to a day-tripper.²² One positive piece of evidence so far indicates New York has retained its allure as a desirable tourist destination. Searches for international flights to the US increased 338% in the month following the announcement of the US border re-opening, and the analysis revealed New York City as the number one most searched for US destination by foreign travelers.²³

New York City will eventually recover from the economic fallout of COVID-19, but some of the changes brought on by the pandemic could stick around. The city’s Open Streets program faces opposition from some residents, but it is popular with restaurant patrons, and was originally touted as a campaign point for tourism recovery. Governor Hochul has already voiced support for the sale of to-go cocktails, and Mayor Adams thus far has been broadly supportive of outdoor dining. The focus on digital engagement will also remain a key way for businesses to reach consumers. Meal kits and virtual exhibits offer ways to diversify and expand revenue streams, and social media provides a viable outlet for building a brand.

4. Investment implications

New York’s tourism industry is facing an uphill battle, and is not anticipated to fully recover before 2025. We view New York’s reliance on digital engagement and advertising during the pandemic as indicative of broader digital transformation trends. Digital advertising looks set for further growth in an increasingly tech-driven world. The city’s growth in plant-based options also provides further evidence of the trends we have identified in our “Food revolution” Longer Term Investments theme. Plant-based food is still a competitive market, and we expect innovators to continue competing for market share in the high-growth industry.

The first Momofuku opened in New York City in 2004, founded by world-renowned chef David Chang. Today, the group has expanded to several locations in the US and Canada, earning two Michelin stars and being awarded the title of “most important restaurant in America” by Bon Appétit magazine along the way. The COVID-19 pandemic was a major setback for Momofuku, and two locations were forced to close as a result. In the following interview, UBS’s Michelle Laliberte and Momofuku CEO Marguerite Mariscal discuss how the company adapted to the challenge, and what major trends will shape the New York restaurant industry going forward.

Michelle: I noticed you’re a native New Yorker—how had the restaurant industry in New York City changed over the years leading up to the pandemic?

Marguerite: When Noodle Bar opened in 2004, it changed dining in New York City, and probably the country as well. It was one of the first restaurants where Michelin star level techniques were used on a bowl of noodles. It helped widen the definition of fine dining, beyond those venues with tablecloths and sommeliers. This was coupled with the massive boom in restaurant growth in the city, transforming what dining could look like.

Social media was also exploding during this time, changing how restaurants could connect with their customers outside of the restaurant’s four walls. As an intern, I helped set up the company’s first Instagram and Twitter accounts. This new form of communication and connection led to the restaurants’ discovery of new patrons and greater customer loyalty, which can be seen today both at Momofuku and in the industry at large. Restaurants are notoriously slow to adopt new technology, but the pandemic forced the industry to adapt quickly. Social media has allowed for a direct line of communication during pivots and changes, closings and reopenings, and maintaining a direct relationship throughout the pandemic.

Michelle: How did the pandemic impact your business, and how did you adapt personally?

Marguerite: Dave and I discussed how to reduce our vulnerability moving forward. Our business was predominantly sit-down dining in restaurants, and didn’t rely heavily on delivery or other mechanisms used by other restaurants. We wanted to create an ecosystem where you could dine in, but also offer food for customers to have at home, and a way to enjoy themselves—and that meant national delivery and home cooking products. In the pandemic, these types of sales began to spike. It provided a way for restaurants to engage with customers on a national level.



Marguerite Mariscal
CEO of Momofuku

Moving forward, Momofuku will continue to have this diversified model. With [coronavirus] variants, one week people are comfortable with dining in, and then the next they’re not, so we will continue to see fluctuations in people’s willingness to visit their favorite restaurants. When the pandemic hit, it felt like a reset. As we reopen, as we expand, as we continue to grow, it’s not about going back to where we were or replicating old models, because they didn’t really work in the first place. The hospitality industry is now trying to figure out the path forward that works, asking how to offer better benefits, better compensation, better hours, and how to get people to pay more for well-prepared food.

Michelle: I believe that you were once quoted as saying, “Momofuku’s guiding principle has always been that, what got us here, won’t get us there.” What are some of the largest trends you believe will shape the food industry in the years ahead? How is Momofuku tapping into them?

Marguerite: Home cooking is going to be an important component in everyone’s lives. People have become better cooks during the pandemic, and whether it’s through formalized classes or sheer willpower, everyone has had to figure it out. People are now more educated and willing to experiment. So, what goes hand in hand here is offering products, guidance, and classes that help people in the kitchen. We see our home cooking products as a way to interact with the customers we’ve never had before.

Momofuku has a wide array of restaurants, and we now see home cooking products as one more piece of the ecosystem. We’re meeting people where they are. Momofuku is able to do this at a large scale given its name, but we’re also seeing the same trend among many other restaurants. There’s an opportunity here that didn’t exist before—to interact with customers in a new way, outside of the four walls of a restaurant.

This interview contains views which originate from outside Chief Investment Office Global Wealth Management (CIO GWM). It is therefore possible that the interview does not fully reflect the views of CIO GWM.



Momofuku Ssäm Bar, found on the second floor at 89 South Street, Pier 17, opened its doors in November 2021.

Michelle: Do you think plant-based options will expand at Momofuku, or more broadly?

Marguerite: It is interesting, or ironic, that when Impossible²⁴ launched its first product, they turned to Momofuku to help launch it in restaurants. Impossible Burger did this in 2016, and Impossible Rice Cakes was the next iteration of that. Momofuku was notorious for being unfriendly to vegetarians and vegans when I started, but as we've grown as a company, we are working to meet the customer where they are—not just in new locations, but also with dietary preferences and restrictions in general. We, as a company, have become more accommodating, because if someone wants to come to the restaurant and experience it, we want everyone to be comfortable.

An interesting meat example is with the pork bun, which is one of our most well-known items, using pork belly. Back when we started serving these, pork belly was picked because it wasn't expensive, as it wasn't a premium cut that a lot of diners were looking for. However, over the past 17 or 18 years, this has changed. It is now a desirable cut of pork and exemplifies how we have to evolve as trends do, and look forward to what's next.

Michelle: Finally, what does the future look like for Momofuku in New York City?

Marguerite: For us right now, maintaining and improving our existing restaurants is the top priority, instead of expansion. Even as we move into other areas, our restaurants will be the hub and the heart of our business. The new products and everything we are doing in other areas come from iterations at the restaurants, where the heart of the brand is. We are about hospitality, and our products must start there—with the ability to directly interact with the customer. Now we are taking that and supplementing it with at-home options. One fact I love is that 90% of Momofuku's following doesn't live in a city with a Momofuku location. They are a demographic that we didn't have ability to reach before. After the pandemic, we are able to address these potential customers in a way that we never could before.

This interview contains views which originate from outside Chief Investment Office Global Wealth Management (CIO GWM). It is therefore possible that the interview does not fully reflect the views of CIO GWM.

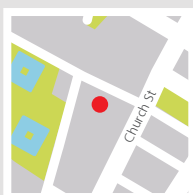




A retail city

The future of retailing

The arrival of the novel coronavirus in 2020 was a severe blow to New York's sprawling service sector. As the initial epicenter of infection in the United States, the city imposed stringent rules governing community interaction. The abrupt decline in foot traffic forced retailers to close their doors and obliged many restaurants to shut their kitchens. Two years on, New York's retail landscape is still evolving.



The **Oculus** is a transportation hub and shopping mall adjacent to One World Trade Center in lower Manhattan. The building was designed by Santiago Calatrava. Its name is derived from the skylights positioned along the spine of the roof.

1. Pandemic impact

Employment in the New York City restaurant, retail, and recreation sectors was down by 169,700 in November 2021, accounting for 41% of total private sector jobs lost since November 2019.²⁵ In addition, the restaurant subsector still employs 30% fewer workers than it did in 2019, while the retail trade has 14% fewer jobs. By contrast, these sectors shrank by only 3.4% on a national basis. The impact was greater in some locations than in others. For example, when employees began working from home, retailers and restaurants located in business districts were forced to close at a faster rate. Once stay-at-home orders were lifted, occupancy limitations were put into place, leaving a heavy strain on the struggling retail industry, and forcing it to find new and creative ways to do business.

2. New York's response

The COVID-19 pandemic pulled forward trends in the retail industry that were already accelerating, specifically e-commerce. While the industry has experienced steady online growth, the spike in the second quarter of 2020 was particularly noteworthy (Fig. 1), and by the end of the year e-commerce had grown by 32% from 2019. This was more than double the 15.7% growth seen in the previous year. We believe that the benefits provided to consumers during the quarantine period will lead to even faster growth in e-commerce utilization and could add impetus to further rationalization of brick-and-mortar retail. This is particularly true in grocery and fresh foods, as an increasing portion of the population utilized various forms of fresh-food delivery during the pandemic.

We also saw a convergence of e-commerce and brick-and-mortar stores through “buy online, pick up in store” (BOPIS) and “buy online, ship to store” (BOSS) arrangements. These two options are potential mitigants to a more rapid migration to e-commerce at the expense of legacy retail. BOPIS has certainly been on the rise over the past few years and may see greater adoption as retailers and e-tailers seek to offset the substantial increase in e-commerce-related shipping costs. In addition, curbside pickup has become one of the outgrowths of the pandemic, as retailers and consumers alike invoked social distancing practices. Many consumers are realizing substantial convenience benefits from curbside pickup and have pushed retailers to retain this as a permanent offering.

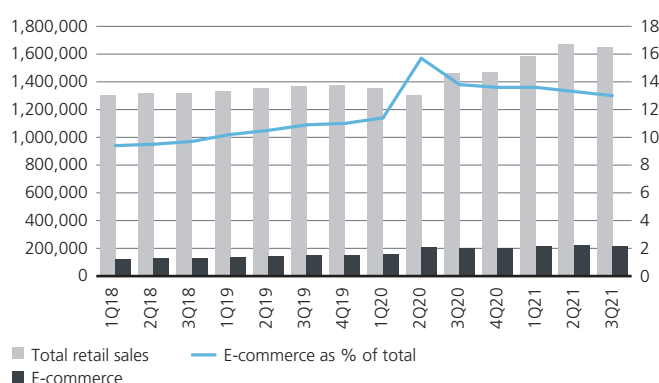
3. What's next

While some of the COVID-related adoptions are probably here to stay, we see the industry changing in other ways. We believe three main themes will dominate the future of retailing in New York: experiential retail; localization and environment-friendly offerings; and the emergence of cannabis retailers.

Figure 1

US quarterly retail sales

Sales in USD millions (lhs); e-commerce as % of total (rhs)



Source: US Census Bureau, UBS

Experiential retail: While experiential retail is nothing new, we expect more companies to create memorable and differentiated experiences that will encourage repeat consumers. For example, off-price retailers may provide a treasure-hunt type of experience for their customers. High-end luxury stores will opt for personalized and concierge-type experiences, including in-store product experts and personalization. Promotional activity will likely also become more personalized, as retailers shift away from broad-based to individualized promotions based on consumer data, loyalty programs, and rewards. More storefronts will also likely convert from places solely for shopping to ones that create a sense of community, including in-store coffee shops, bars, restaurants, and entertainment.

Historically, retailers in New York City built large flagship stores to increase brand recognition and awareness, often targeting their products for tourists. We think these types of stores will be reconfigured and get smaller, as retailers focus on an omnichannel strategy that blends shopping online and in-store to provide a better overall experience for the consumer. With smaller (and perhaps fewer) storefronts, retailers can enhance the experience to make a single neighborhood store feel more special and localized. Nike, for example, is updating the consumer experience through augmented reality (AR) and virtual reality (VR). Customers can scan items to view information or enter a VR world to experience the different steps in a supply chain. Nike's flagship store in Midtown Manhattan creates an immersive experience in conjunction with the Nike App that allows consumers to get expert help to find and customize the perfect product for them. We expect AR and VR to be used online as well, with some brands already using AR to enable consumers to view how furniture would fit and look in their homes when shopping online.

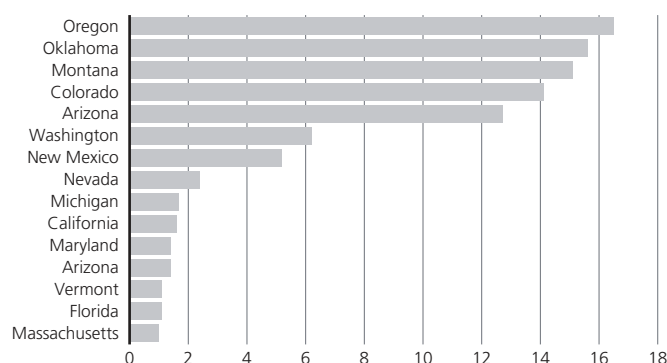
Localization and environmentally conscious options: Given our limited mobility throughout the pandemic and the desire for people to support their community during difficult times, many consumers chose to shop locally. According to CapGemini, 79% of consumers are reevaluating their consumption based on social responsibility and environmental impact.²⁶ Thus, we think the future of retail in New York City is likely to be more local, with larger retailers placing a greater emphasis on curated assortments. Stores may also offer exclusive items or experiences in different parts of the city to better cater to their unique consumers. The clothing assortment in a retailer's store on the Upper West Side may look very different from its locations in Midtown Manhattan or SoHo. Smaller, mom-and-pop stores are poised to benefit as they are likely to be neighborhood fixtures that already have personal relationships with their shoppers. According to a study by Accenture, 56% of consumers today are patronizing neighborhood stores or buying locally sourced products.²⁷

Consumers are increasingly conscious about the impact of their spending, and retailers are specifically targeting younger Gen Z and millennial consumers. For example, some brands already have programs in place where consumers can return their used products to the company to be recycled for future production. We believe this will become more widespread and even be used as a selling point for brands, with companies advertising the materials of their products more frequently. We expect retailers to highlight components such as organic or recycled textiles. Increasing regulatory scrutiny, such as that regarding textile waste in Europe, may also open opportunities for growing second-hand and resale markets. Younger consumers have already increased the amount of organic and natural products they use and consume, and trends show that they are willing to spend more on a product if it is natural or organic and made with fewer ingredients.

Figure 2

Number of dispensaries per 100,000 residents

Dispensaries include both medical and recreational marijuana



Source: Verilife, UBS, as of 13 January 2020



Investor takeaway: We should never underestimate the ingenuity of New York's entrepreneurs to adapt to the new environment, but e-commerce is here to stay, and retailers can continue tapping into their omnichannel capabilities for future growth.

Emergence of cannabis retail: With recreational cannabis use now legal in New York state, cannabis dispensaries will start to open up throughout Manhattan over the next several years. Dispensaries that already exist in states such as Colorado, California, and Washington are clean, bright, and often offer attentive and personalized service—some even approximating the famed aesthetic of Apple stores. As the pandemic shuttered many retail doors throughout Manhattan, we think cannabis dispensaries could fill up some of this empty space.

Dispensaries are likely to open at the end of 2022 and, over time, New York residents should be able to order home delivery, consume marijuana in specific cannabis lounges, and cultivate up to six plants at home. Cities, towns, and villages had the ability to opt out of allowing adult-use cannabis sales in their jurisdiction by passing a law by 31 December 2021, but they could not opt out of adult-use legalization. Prior to legalization in New York, 15 states plus the District of Columbia (33% of the US population) had already legalized adult-use cannabis, while 35 states and DC (66% of the population) had approved cannabis for medical use.

4. Investment implications

In the wake of COVID-19, retailers in New York will adopt new strategies to encourage residents and tourists to patronize their shops. We should never underestimate the ingenuity of New York's entrepreneurs to adapt to the new environment, but e-commerce is here to stay, and retailers can continue tapping into their omnichannel capabilities for future growth. COVID-19 accelerated the shift away from brick and mortar, and navigating e-commerce will continue to be a critical way for retailers to offset lower levels of foot traffic. We discuss the e-commerce theme more broadly in our *Longer Term Investments* report "E-commerce."



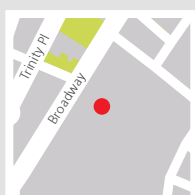


A financial city

New York's future as a global financial center

New York City's physical attributes, among them a natural deepwater harbor and an advantageous location on the eastern seaboard, bolstered its position as a major trading hub in the early years of the Republic. Commercial banks and investment firms gravitated toward the city and established offices near the stock exchange, located at the corner of Wall and Broad Streets. To this day, the New York Stock Exchange (NYSE) is the largest in the world, and the city retains its role as a well-spring of capital for US industry.

New York's economy surged ahead in the early 20th century, and the city soon became the world's largest manufacturing center, home to a multitude of corporations. While its manufacturing prowess has all but disappeared, the city remains home to many of the world's leading financial institutions, driving capital markets and investment banking activity. New York possesses unique advantages in the size and breadth of its financial sector, its stable political and business environment, its deep access to human capital, and its developed infrastructure. For these reasons, we believe New York City will retain its position as a center of global finance for the foreseeable future. In this chapter, we explore New York's preeminent financial industry position in the context of the global pandemic.



Wall Street, located in lower Manhattan, formed the northern boundary of the New Amsterdam settlement in the 17th century. The New York Stock Exchange was established in 1817 with 17 rules governing the trading of securities. The current building, pictured at left, was completed in 1903 and is a national historic landmark.

1. Pandemic impact

After the initial turmoil due to the COVID-19 pandemic, New York's financial industry resurfaced stronger than before. Monetary stimulus and fiscal aid packages injected massive amounts of liquidity into the US economy in 2020, which led to strong profits for the securities industry. According to the Office of the New York State Comptroller, debt offerings soared 31% to USD 10.2 trillion in 2020 from USD 7.8 trillion in 2019. Global equity offerings skyrocketed 56% to a record USD 1.1 trillion, excluding merger deals involving special purpose acquisition companies (SPACs). The first three quarters of 2021 already brought USD 957 billion in equity offerings. In turn, profitability, as measured by NYSE member firms' pretax profits from broker-dealer operations, rose by a staggering 81.2% between 2019 and 2020.

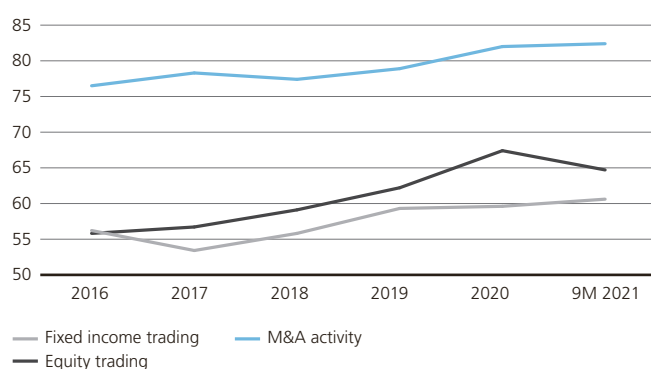
New York-based firms' share of global capital market activity has been growing as well. According to Citibank, US-based firms accounted for 64.7% of equity trading, 60.6% of fixed income trading, and 82.4% of M&A advisory reported revenue through the first three quarters of 2021. These numbers are up from 55.8%, 56.2%, and 76.5%, respectively, in full-year 2016. Not surprisingly, New York is at the top of the Global Financial Centres Index 30, which ranks the world's most competitive cities as financial centers—ahead of its peers by a sizable margin.

The securities industry remains an important engine of New York City's economy. Based on gross product and wage data, it accounts for 14% of all economic activity—higher than any other industry—as of 2019, the latest available data from the Office of the State Comptroller (OSC). Tax collections attributable to the industry rose to a record USD 4.7 billion in the city's fiscal year ending 30 June 2021. Financial services accounted for roughly 7% of total tax collections, an increase from 6% in 2020 and the highest since 2015. The State of New York relies on Wall Street even more than the city—the securities industry accounted for an estimated 18% of total tax collections during the state's 2020 and 2021 fiscal years.

Figure 2

New York-based firms' market share of capital market activity

USD volume, in %

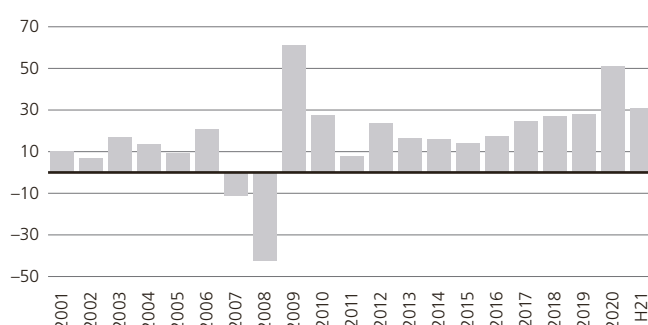


Source: Citibank, UBS, as of 3 November 2021

Figure 1

Pretax profits of NYSE broker-dealers

In USD billions

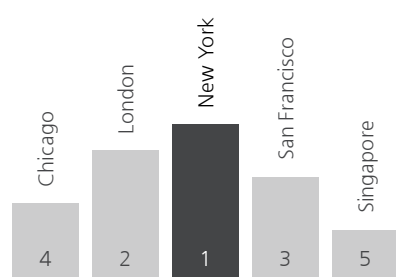


Source: Office of the New York State Comptroller, UBS, as of 1 October 2021

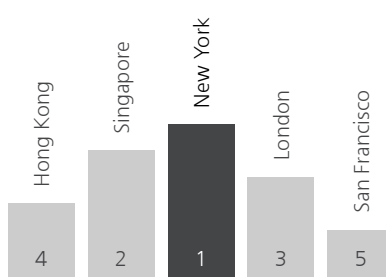
2. New York's response

While Wall Street's share of total trading and investment activity has risen over the years, employment has been in a secular decline. This structural trend, which has been in place since the turn of the century, was exacerbated by the pandemic. From its peak in 2000, employment has fallen by 9%, or 19,000 jobs, as of 2019, and the pandemic resulted in an additional decline of almost 4% in 2020 through the first eight months of 2021, according to the OSC. Some of the job losses are a result of productivity gains, technological advancement, and cost-cutting strategies. Others are due to shifting employment in "back offices" and support functions to regions with a lower cost of living. As such, the portion of the US securities industry jobs held in New York City nearly halved from 33% in 1990 to 18% in 2021. In effect, New York has retained its position as the home of high-priced talent, but lost middle-income wage earners to other parts of the country.

The industry responded to the pandemic by shifting to a remote work environment. Hybrid work arrangements have proven to be a relatively successful experiment, allowing some firms to reduce their real estate footprint while incurring fewer costs associated with accommodating a larger work force in the office. Employees became accustomed to working from home, and some have even moved temporarily or permanently outside of New York. The challenge now is bringing employees back into the office. Different financial firms are taking different approaches to resolve this issue. A few firms are demanding that employees return to the office full-time once the contagion from the new variant subsides. Some are taking a more hybrid approach in which working from home is likely to remain an option, while others decided to open satellite branches outside of New York City to accommodate employee preferences. While the final impact to New York City employment is unclear, what is evident is that the industry is becoming more flexible, and this may help attract and retain talent in the future. This newfound flexibility is likely to benefit the financial services industry in its ability to compete for talent; however, it may come at the city's expense if the highest earners decide to relocate.



Business environment

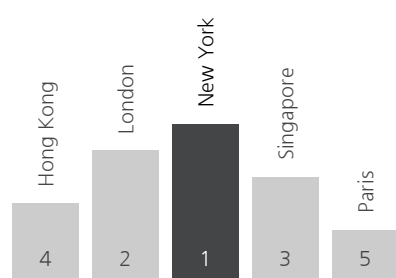


Human capital

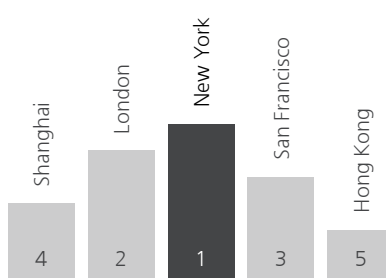


Areas of competitiveness

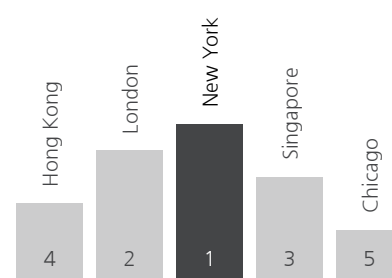
According to the GFCI 30 survey as of September 2021, New York led in every category when assessing the competitiveness of global financial centers.



Infrastructure



Financial sector development



Reputational and general

3. What's next

The generous profits reaped in the wake of the pandemic are likely to subside, but new issue volumes are projected to remain high in 2022. For example, Bank of America projects that total new fixed income issuance in 2022 will exceed USD 9 trillion. Moreover, while the Federal Reserve is expected to tighten monetary policy, a steeper yield curve tends to benefit financial institutions.

From a market share perspective, New York City is likely to maintain its lead in the financial sector over other locales. According to the GFCI 30 survey as of September 2021, the city led in every category when assessing the competitiveness of global financial centers. Of the top-ranked cities, New York was followed by London, Hong Kong, and Singapore. Importantly, Hong Kong and Singapore both fell by 25 points in the ratings from the prior survey, while New York and London only fell slightly, reinforcing New York City's preeminent position. Additionally, according to the survey, over the past three years, New York has improved its rank position in several categories, such as human capital, business environment, and infrastructure, and has maintained its leading position in financial sector development and reputation.

Fintech is a rapidly growing industry that is likely to disrupt the financial sector in a number of ways. This prospect raises the question of both the stability of the industry as well as New York's status within it. An important point to remember when pondering this topic is that all large financial institutions are actively investing in fintech as a part of their business. While areas such as cryptocurrency and blockchain may be seen as challengers to the financial industry, most fintech innovation will improve efficiencies and help better serve the end-client. As for New York, GFCI 30 also ranks the city first in fintech,

which suggests that even in the event of disruption, employment associated with the development of new financial applications will remain centered in New York.

Capital market activity is also likely to remain rooted in New York due to its well-developed infrastructure and reputation. A question remains over how the newfound flexibility will impact employment in the sector. It is possible that remote work or the establishment of branches in new locations will allow some senior executives to move away from New York. There are already indications that this is happening. But it is also possible—indeed likely—that New York will continue to attract younger talent. The effects of this shift are still unclear, but some things are working in New York's favor. First, New York remains one of the most exciting cities for young, ambitious people. Second, with the bulk of activity remaining in New York, companies are unlikely to want all of their key personnel to be based elsewhere permanently. Finally, the growth of the fintech industry in the city could replace some of the jobs lost to other locations, but disruption within financial services is not unique to New York, and the large financial incumbents with a presence there have a role to play in the transition.

4. Investment implications

In our view, investors can tap into these trends by taking a diversified approach between the innovators and disruptive fintech services, and incumbents with a clear fintech strategy. Ultimately, New York has a strong history as a global financial center, and we believe the roots are sufficiently deep to allow it to retain its status even as the fintech landscape continues to evolve. See our *Longer Term Investments* report "Fintech" for more on the broader investment theme.

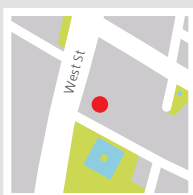




An innovative city

New York and new media

The **USD 1.2 trillion** media industry is undergoing a digital transformation. Newspapers, magazines, and even linear television are being left in the rear-view mirror as new media goes mainstream. As the headquarters of a variety of traditional media conglomerates, New York has exerted significant cultural influence on the nation for decades. The city is home to the *New York Times*, three national television networks (ABC, CBS, and NBC), and prominent advertising agencies on Madison Avenue. Given the shifting landscape, New York was already adapting to the digital transformation, positioning for the new media future. The pandemic-induced remote work environment further accelerated the transition toward a more digital lifestyle, supporting interest and growth within new media.



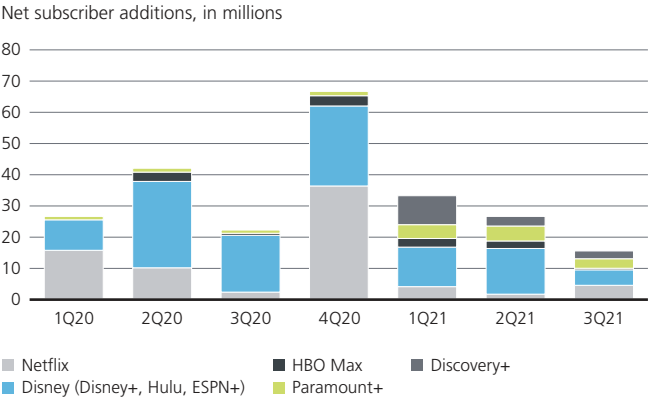
One World Trade Center is the tallest building in the western hemisphere. It was purposefully constructed to be 1,776 feet tall, referencing the year that the Declaration of Independence was signed. The building opened in 2014 with mass media company Condé Nast as its first tenant and continued to attract an abundance of technology, media, and creative firms.

1. Pandemic impact

Demand for media content soared during the global pandemic as people spent the majority of their time at home. Uncertainty and fear regarding the disease ran rampant, pushing people toward digital news sites not just on a daily basis, but a seemingly hourly one searching for clarity. Spending so much time at home also led to a spike in demand for entertainment content. Media companies accelerated plans to launch direct-to-consumer (DTC) streaming services due to surging subscriber interest, with major services adding 160 million global subscribers in 2020 alone (Fig. 1). Digital media businesses benefited from people turning toward online networks to stay connected with friends and family.

While consumer demand soared, the industry faced supply-side challenges due to limitations on in-person interactions. Shifting to remote work environments is not a viable solution for much of the television and film industry, which accounts for approximately one-fifth of media industry revenue. Productions shut down throughout New York City and across the world. The seemingly insatiable demand for new entertainment content suddenly became much harder to meet. However, some companies were able to move post-production work to remote settings. Additionally, companies with rich back catalogs of content benefited from licensing deals with the ever-growing pool of DTC providers who were starved for titles.

Figure 1
Streaming services experienced high demand during the pandemic



Source: Company reports, UBS



Investor takeaway: We expect the new media recovery and subsequent hub for tech-related jobs to benefit the entire industry and broaden the base of the New York City economy.

The suspension of in-person gatherings, such as attendance in movie theaters, created additional challenges for the media space. Films that cost hundreds of millions of dollars to create were suddenly adrift without an obvious revenue source. Instead they were used as marketing vehicles to attract consumers to new streaming services or faced continual release date delays. Experimenting with film distribution strategies during the pandemic had a meaningful impact on the industry, with more studios now willing to release movies simultaneously in theaters and on streaming services, or skipping the theater altogether for certain films.

In contrast to many of their traditional peers, digital media companies were able to shift to a remote work environment more seamlessly and benefited from people of all ages becoming more digitally native. In fact, digital advertising grew 11% in 2020 even as every other advertising segment declined (Fig. 2). Companies slashed traditional marketing budgets, taking advantage of the targeting capabilities and higher return on investment that comes with digital advertising.

2. New York’s response

New York is a major hub of influence in the media landscape. It is one of the largest markets for radio and television content, is home to the most filmed location in the country (Central Park), and is renowned for its broad array of cultural venues.

The TV and film industry’s impact on New York City was at an all-time high prior to the pandemic. According to the Mayor’s Office of Media & Entertainment, the industry was responsible for over 185,000 jobs, USD 18 billion in wages, and approximately USD 82 billion in total economic output for the city. New York has 1.5 million square feet of soundstages supporting the industry, which ranks third in the US behind only California and Georgia.

The rate of job growth in the city's motion picture and video production sector immediately prior to the pandemic was twice the average rate recorded over the past 15 years. Part of the growth can be attributed to the city and state incentives through tax credits. However, shortly after jobs and investment reached all-time highs in 2019, the TV and film industry saw sweeping layoffs due to the pandemic, with 25% of jobs cut by only the second quarter of 2020 when compared to 2019.

While the production industry was hit particularly hard, it is now a bright spot in the city's recovery. By August 2021, overall production had reached close to pre-pandemic levels, with approximately 34 projects filming throughout the five boroughs. The insatiable demand for content is driving further investments in additional soundstages in New York. For example, Netflix is building six new soundstages in East Williamsburg. Studios are targeting both Queens and Brooklyn when investing in new locations.

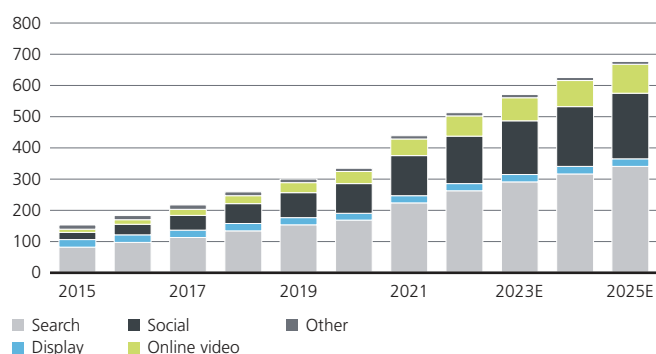
It wasn't long until other prominent New York institutions acknowledged the necessity to adapt to the new environment. For example, the Metropolitan Museum of Art accelerated its digital transformation strategy by encouraging use of "The Met 360 Project," developed learning programs, and live-streamed performances and curatorial talks. Even the storied Metropolitan Opera now makes its content available as a subscription-based app.

While digital media companies were among the first to make the shift to remote work, prominent companies pivoted rapidly to a hybrid work environment without abandoning plans for a New York presence. Meta Platforms and Alphabet both signaled interest in growing their footprint in the city. Meta, Facebook's parent company, agreed to lease all of the office space in The Farley building, which is the iconic post office building across from Madison Square Garden, in August 2020.

Figure 2

Digital advertising continued to grow even as the rest of the industry fell in 2020

Global digital advertising revenue, in USD billions



Source: Magna Global, UBS

The move would allow an additional 8,500 of the company's employees to work in the city. Google's parent company purchased the Hudson Square building for USD 2.1 billion in September 2021, which will be host to 12,000 employees on the city's lower west side.

3. What's next

New media is supported by a number of longer-term secular trends. Consumers are exiting the pandemic more adept at managing digital content than ever before. In the near term, we expect the film and TV industry to recover rapidly to pre-pandemic levels. Major media companies are focused on driving subscriber growth on their streaming services by investing over USD 140 billion in content globally in 2022. New York is a clear focus with numerous new soundstages being built throughout the five boroughs, which should support further industry growth in the future.

New York is also establishing itself as a major technology hub in the midst of a digital transformation. Major digital media players are growing their footprint in the city, viewing it as an essential location for future growth opportunities. Both Alphabet's and Meta Platforms' new offices will attract thousands of highly skilled workers. More broadly, we expect the global digital advertising space to remain healthy and grow an average of 11% for the next five years.

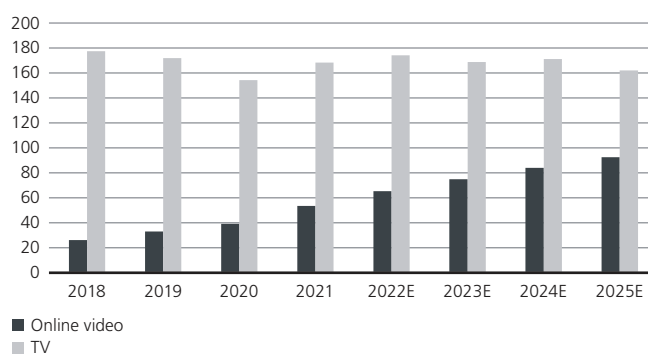
4. Investment implications

New York City serves as the headquarters for many traditional players, including the three national broadcast networks and seven of the world's top eight global advertising agencies. Looking ahead, the city is becoming increasingly important as the center of operations for a growing list of digital media players such as Gimlet Media, Tumblr, and BuzzFeed. We expect the new media recovery and subsequent hub for tech-related jobs to benefit the entire industry and broaden the base of the New York City economy.

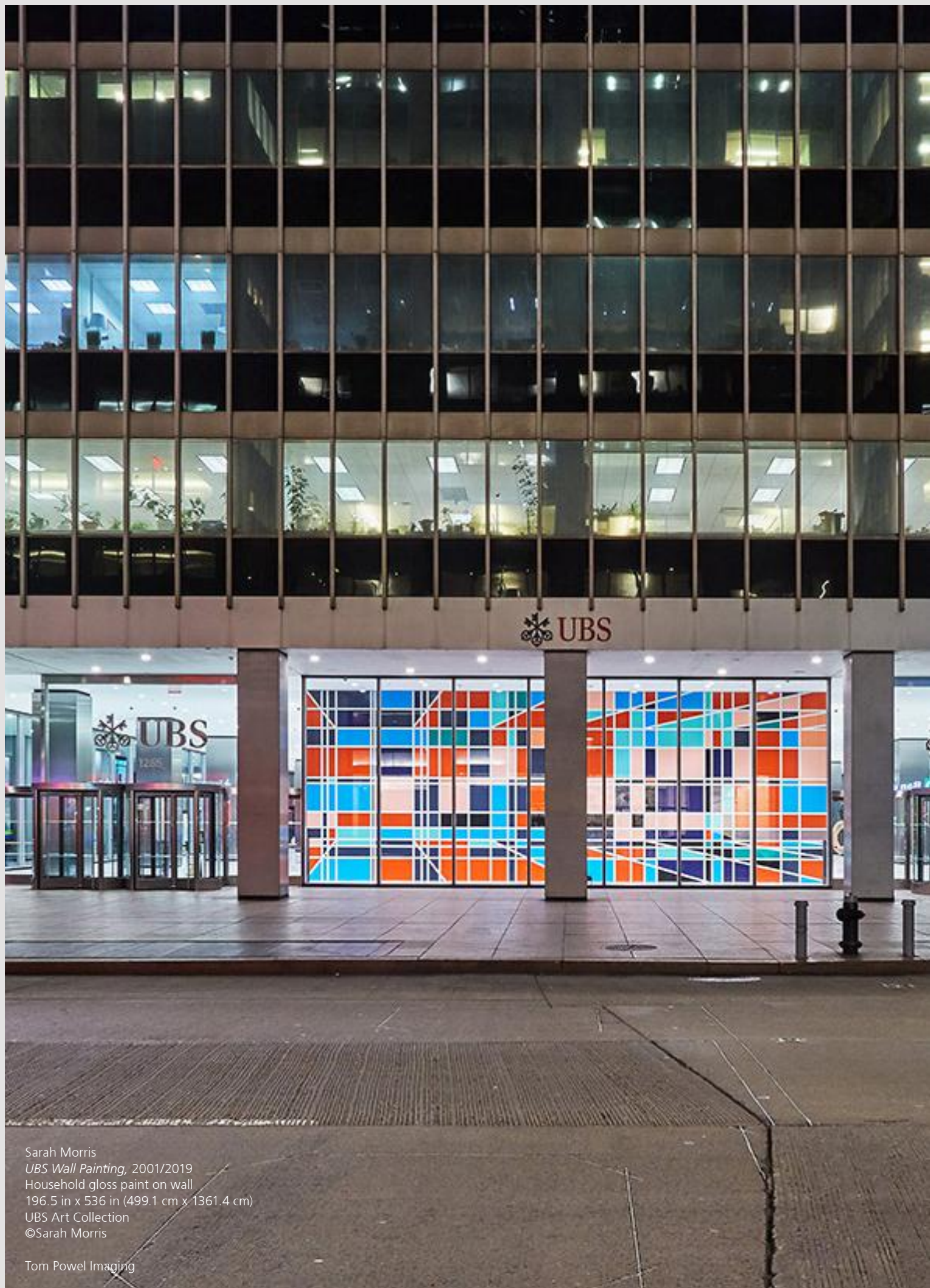
Figure 3

Digital video advertising taking share from declining linear TV segment

Global video advertising revenue, in USD billions



Source: Magna Global, UBS



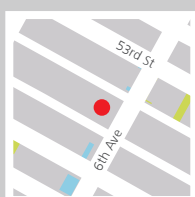
Sarah Morris
UBS Wall Painting, 2001/2019
Household gloss paint on wall
196.5 in x 536 in (499.1 cm x 1361.4 cm)
UBS Art Collection
©Sarah Morris

Tom Powel Imaging

An artistic city

An interview with Marc Spiegler, Global Director of Art Basel

The New York metropolitan area constitutes the largest market for fine art in the United States, with an unparalleled number of museums, private galleries, and public exhibitions. Recent research by UBS concluded that more than one-third of all art shows and exhibitions in the US from 2017 to 2021 were held in New York. The city's role as an important hub of the global art trade is bolstered by the presence of world-renowned institutions and avid collectors. Our colleague Paul Donovan sat down with Art Basel's Global Director, Marc Spiegler, to discuss how the pandemic affected the New York art market and its participants.



Sarah Morris's UBS Wall Painting is part of the UBS Art Collection, comprising more than 30,000 works by artists from around the world and widely recognized as one of the most important corporate art collections. The artworks are displayed in UBS offices globally and in the UBS Art Gallery in New York, serving as an inspiration for employees, clients, and the public.

This interview contains views which originate from outside Chief Investment Office Global Wealth Management (CIO GWM). It is therefore possible that the interview does not fully reflect the views of CIO GWM.

Paul: Marc, let's begin with the immediate impact of the pandemic. How was New York's fine art market affected by COVID-19?

Marc: One of the distinctive factors of the New York market is that it is a city that still has a lot of walk-in business for local galleries. Unlike many other cities, in New York, many collectors visit a regular roster of galleries, discover new works, and buy them there.

New York was among those cities hit hardest, and earliest, by the pandemic. Many galleries closed for a long period of time. Fortunately, many gallery owners found that the art market was buoyant once the city began to reopen. Some speculated that was because consumers weren't spending as much money on things like travel and restaurants. A second theory was that people were spending more time at home and were focused on their personal environment. And then there was the idea that many existing collectors had done intense research about artists and galleries during lockdown and were eager to buy once mobility restrictions were eased.

For me, the high point of 2021 was Art Basel Miami Beach in December. The New York galleries did very well there—because New York collectors are a very big presence and because it's the strongest American fair. There was a lot of pent-up demand, and many collectors hadn't made the trip to Europe for the autumn art fairs. So, all in all, 2021 exhibited a surprisingly good market for art. And you saw that not only in the galleries, but also at auction and in this kind of parallel market that arose around NFTs.²⁸

There is one point of caution I need to highlight, though, in evaluating 2021. When I spoke to gallery owners in New York, it was quite apparent that they have had to work much harder, and in ways which were much less pleasant: It's a very different thing to be pitching artists over Zoom than it is to show works in person, perhaps in the presence of the artist. And so, a lot of people found themselves doing a kind of business that they really hadn't signed up for in order to keep their galleries alive.

One more characteristic makes the city unique in North America: Almost all the "mega galleries" are present in New York. These galleries, who had the resources to do a lot in the online space, pushed forward very rapidly with those efforts. And the galleries that had the option and resources to set up satellite spaces in Aspen, on Long Island, and in Palm Beach did so. The strong got stronger and the weak struggled even more.



Marc Spiegler
Global Director of Art Basel

Paul: I wanted to follow up on the online argument, because a lot of what you've been talking about is around the behavior of collectors. They were quiet in 2020 during the earliest days of the pandemic, but apparently did a lot of research and returned with a vengeance. You mentioned that New York traditionally has been more dependent on walk-in sales than elsewhere. So has New York been less reliant on online sales than other cities around the world? Or has it still taken place despite New York's traditional dependence on walk-in sales?

Marc: I believe a lot of people in New York who had never bought a work online started doing so during the pandemic. But I also believe the New York market came back very strongly because the tri-state region has the greatest concentration of collectors in the world and some of the most important global museums.²⁹ Once the galleries reopened, those patrons flocked to the venues to which they had access while global travel was still restricted. They were not only avid to buy, but they were also spending more of their money in New York than they might have done otherwise.

To come back to your original question, I think the in-person business has traditionally been stronger in places like New York and London and Paris than it has been in places which are located on the periphery of the art world. But regardless of the density of galleries in New York and the density of collectors that live there, many people just became more digitally adept. For galleries, that meant they discovered how to promote themselves using an online presence; for collectors, it meant researching and buying art online. If you were to draw an analogy to another industry, people who were used to buying all of their groceries in person suddenly experimented with buying online and having their groceries delivered. And they discovered it's convenient.

The pandemic thus created a shift, smaller or larger depending upon the type of art being bought or sold. We saw this already in the data from last year's "Art Basel and UBS Global Art Market Report." In the past, online sales in the art market had always lagged well behind the broader retail segment. That trend was upended in 2020, and online sales had become a much bigger part of the art market than they were in the broader retail market.

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Paul: New York is an expensive place to do business. Will the city be able to maintain its coveted status as a leading art market in terms of gallery space? Or will we see a change? Perhaps less of a physical presence in New York City and more of a presence in the virtual world? Or do you think that the traction of the physical gallery is still going to hold in the post-pandemic world?

Marc: I don't see a shift away from gallery spaces in New York for two reasons. The foreign galleries benefited tremendously from the fact that they were within walking and driving distance of this great body of collectors. And people could still come in by appointment, of course. So, they were doing business with collectors who were not able or not willing to cross international borders. Henceforth, gallery owners will, if anything, see the need to have more of a foothold in New York, not less.

And just as importantly, galleries are investing in New York real estate. If you go around Tribeca now, you certainly don't get the impression that things are shifting away from the gallery model. Quite the contrary. Tribeca is coming back as a gallery district, after decades where its status has diminished. The galleries relocating there have much bigger spaces than they had previously. So this meme that "the gallery space is over," that "everyone's going to move into the metaverse," is just not sustained by the evidence on the ground.

Paul: So how do you think the New York art market develops in the future? Will we see bigger spaces and perhaps more interest in the art market? And are the galleries going to attract potential collectors with an online presence and then bring them into the larger physical spaces?

Marc: There are a couple different answers to that. We talk a lot about a hybrid art market, one in which the physical space and the online space are productively synergistic. In some instances, people will discover a gallery in person or at an art fair and then follow its activities online. In other cases, a gallery or an artist is discovered online, and then as the research goes deeper, the collector will go and see the space and the artwork in person.

Let's say that I have a physical gallery and my online presence is limited, but my neighbor is doing a great job online. A lot of people may choose to discover his or her physical space after browsing online. They're also going to see my space next door and perhaps they're going to walk in. And so, you have many galleries in New York who I think will be doing digital promotion for their gallery and its artists, and that's going to drive more engagement and energy with the whole neighborhood.

The other big component is a little harder to assess, and that is the impact of the NFT collectible space. Just to pull the curtain back a little bit, my team at Art Basel needed to convene a special internal working session to think about how to handle all of these messages suddenly popping into our inboxes, from folks explaining that they were serious art collectors, and sharing with us the NFTs that they had already bought. Now, these are people who had never bought a painting, sculpture, video, or photograph. They were not museum patrons and didn't meet any of the characteristics we have traditionally used to define a collector. We decided to operate from a place of optimism and to say, "They're not collecting the art that our galleries sell, and they're not collecting from our galleries yet, but let's bring them into the fair and see what happens."

Many galleries, and the artists they represent, are exploring this space. So the question is, how much will the traditional art market move in the direction of the NFT space? And alternatively, how much will the NFT space give rise to new collectors, new engagement, and new forms of patronage for the traditional art market?

Paul: We've discussed the immediate impact of the pandemic. Let's step back and take a longer view—how does the New York art market develop over the longer term?

Marc: We're likely to see two overarching trends. First, we'll see some consolidation among the New York galleries. Second, we'll see more digitalization of the art market—which, in theory, could be seen as a detriment to a metropolis like New York, but I think the opposite could be true. Synergistic cross-promotion, which I mentioned earlier, could benefit New York because collectors can access multiple galleries in a single day after visiting many of them online.

And the other thing—and this is very important—is that traditionally the real challenge for New York galleries has been real estate. It is an expensive place to get ground-floor retail space worthy of showing great art within. But the explosive growth of online commerce means that there will be much more ground-level estate available for galleries than ever before. People are not going to come back to offices the way they were before, and people are not going to go and shop for clothes in person the way they were before. Art galleries may benefit from this by securing great new spaces, as we already see in Tribeca.



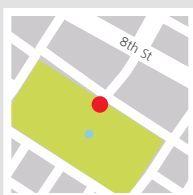


An educated city

The future of higher education

The higher education sector nationwide is slowly recovering from the severe pandemic-induced disruption that upended the business-as-usual environment. Progress remains uneven, however, as the rapid spread of the omicron variant has once again forced some colleges to suspend in-person instruction. While high vaccination rates (and declining hospitalizations in some areas such as New York) will aid the recovery, sluggish enrollment trends and cost pressures will persist in the short term. Over the longer term, demographic and technological changes will increase the gap in credit quality between large, highly selective institutions with substantial endowments or state support, and their smaller, less selective counterparts with limited financial resources.

New York City is home to several colleges and universities, including some nationally and internationally esteemed institutions, and over half a million college students, more than any other city in the nation. Some of its larger institutions are Columbia University, City University of New York (CUNY), Fordham University, New York University (NYU), and St. John's University. Collectively, they account for more than 300,000 students and USD 18 billion in debt outstanding.



Washington Square Park, a 9.75-acre public park, is a hotspot for cultural activity. It is also embedded in the New York University campus. Many of the park's surrounding buildings were built by NYU, while others were converted for academic purposes.

1. Pandemic impact

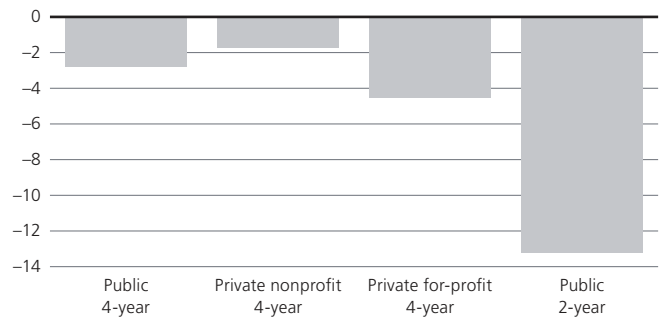
Over the last two years, the higher education sector nationwide has been severely disrupted by the COVID-19 pandemic. Colleges were forced to cancel in-person classes and resort to remote methods of teaching, while many students deferred attendance. Overall enrollment fell across all types of higher education institutions, with community colleges (public, two-year institutions) suffering the greatest impact (Fig. 1). Despite an increase in graduate student headcounts, reduced undergraduate enrollment drove the overall decline. New York was no different, and all higher learning institutions in the city mentioned in this report also saw enrollment declines (Fig. 2).

Enrollment is only part of the story, however. The credit strengths of private, not-for-profit institutions such as Columbia, Fordham, NYU, and St. John's are in part driven by their selectivity—i.e., the ratio of admissions to applications—and the size of their investment portfolios relative to their debt (Fig. 3). To that end, Columbia stands out thanks to its stellar international reputation (which allows it to accept only 6% of applicants) and sizable investments relative to its debt. NYU's low selectivity ratio of 23% also highlights its solid market position and student demand. Fordham and St John's have less headroom in terms of student demand given their higher selectivity ratios; however, their healthy investment-to-debt ratios in excess of 100% increases their resilience to the adverse impacts of the pandemic.

Figure 1

Enrollment declined nationwide across all institution types

Change in enrollment 2021 vs. 2019, in %



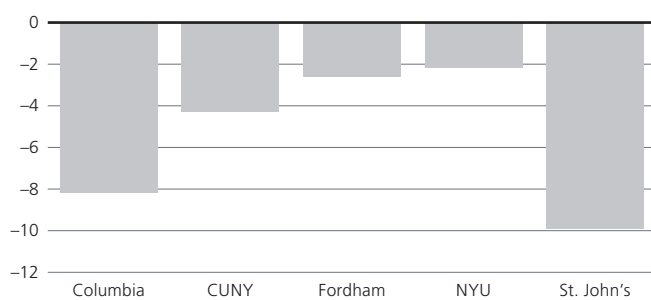
Source: National Student Clearinghouse, UBS

On the other hand, the credit quality of public higher education institutions, such as CUNY, depends to a great extent on their importance within the state, the extent of fiscal support (through appropriations and grants) provided by the state and local government, and the credit strength of those governments. Fifty percent of CUNY's total revenues are derived from appropriations, grants, and contracts from New York State and New York City. Both governments have exhibited financial stability on the back of federal fiscal support.

Figure 2

The pandemic reduced enrollment in key NYC higher education institutions

Change in enrollment 2021 vs. 2019, in %

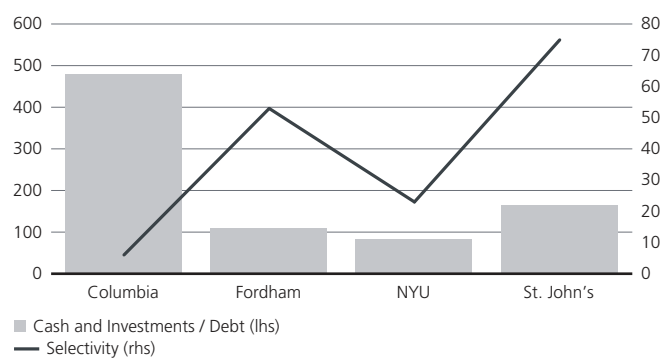


Source: Merritt Research, UBS, as of 18 January 2022

Figure 3

Wealth levels relative to debt and selectivity, 2021

Cash and investments relative to debt (lhs) and selectivity ratio (rhs), in %



Source: Merritt Research, UBS as of 18 January 2022

2. New York's response

As the pandemic took hold in 1Q20, strict social distancing guidelines led virtually all of the city's higher education institutions to abruptly cancel in-person classes and move to remote learning modes. In the wake of the unprecedented crisis, Congress provided USD 77 billion of financial assistance to the public and not-for-profit higher education sector through three Higher Education Emergency Relief Fund programs authorized by the CARES Act, CRSSA Act, and The American Rescue Plan, respectively. The aid focused on providing emergency financial aid grants to students and reimbursing institutions for costs and revenue shortfalls. Allocation to a particular institution was heavily based on the number of students receiving Pell grants, thus directing aid where it was needed more. Approximately half of the overall funding was directed at students, and the other half at institutions. The fiscal help provided much needed assistance to financially struggling students as well as timely liquidity support for many institutions. While nearly all New York City higher education institutions benefited from the federal assistance, CUNY was the biggest beneficiary, receiving more than USD 750 million in relief funding.

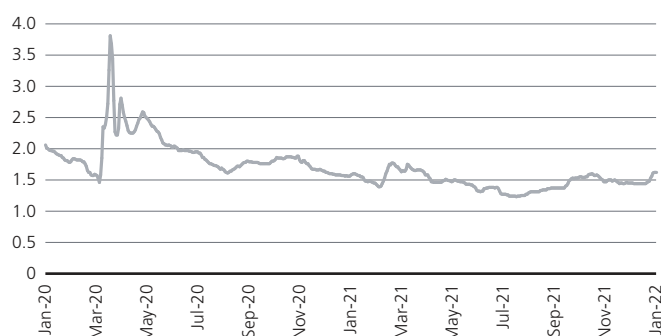
3. What's next

The rapid spread of the omicron variant remains a risk factor in the near term as many institutions have been forced to cancel in-person classes again. However, we believe this latest wave will soon dissipate. Nevertheless, in the near term, COVID will almost certainly leave behind an impact on the sector in terms of greater adoption of online classes and enrollment challenges—enrollment for the fall 2021 term was below expectations—although we do expect a recovery in the fall of 2022.

Figure 4

Higher education bond yields are now lower than pre-pandemic levels

S&P Municipal Higher Education Index bond index, yield-to-worst in %



Source: S&P Dow Jones Indices, UBS, as of 13 January 2022



Investor takeaway: We prefer higher education institutions that have a substantial student body, enjoy a solid academic reputation, and have substantial endowments or solid financial support from state and local governments.

In the longer term, the projected decline in the number of high school graduates in the US will present headwinds for the higher education sector, particularly in the Northeast and parts of the Midwest, where the phenomenon will be most pronounced. However, institutions such as Columbia and NYU will likely continue to thrive given their preeminent international academic standing. Fordham and St John's, although solid institutions with healthy financial metrics, will likely face a mix of opportunities and challenges as they are more exposed to competitive market dynamics. CUNY will retain a unique position based on its pivotal role as a key public institution in the city, offering a college degree at a fraction of the cost of the not-for-profit private universities. Political support for CUNY at both the state and local levels appears assured, although its fate will be closely tied to the budgetary flexibility or constraints of the state and the city.

4. Investment implications

The near-term credit outlook for higher education is somewhat mixed given still-weak enrollment trends, although we expect their recovery to pick up by the fall of 2022. That said, after a solid rally in the municipal market since March 2020, bond yields in the higher education sector are now tighter than pre-pandemic levels (Fig. 4), so careful credit selection is essential especially given the widening credit quality gap between financially strong colleges and those facing substantial fiscal and market challenges. We prefer higher education institutions that have a substantial student body, enjoy a solid academic reputation, and have substantial endowments or solid financial support from state and local governments. Please refer to our report titled "Private Higher Education Risk Assessment Framework" published 4 June 2021 for more information.



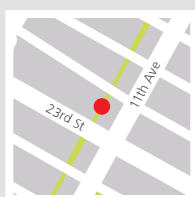


A sustainable city

New York faces climate change

Sustainability is another word for durability or continuity. New York City is the largest and most prosperous city in the United States. To understand how the city is positioned for the future, we must examine how it is adapting to social and environmental challenges—two closely intertwined components of sustainability.

Although critical to the US economy and a global center of innovation, New York is exposed to climate change and at risk of social instability. With an estimated 520 miles of coastline, much of the city's critical infrastructure is subject to physical climate risks. According to Moody's,³⁰ 6.2% of housing, 16% of hospital beds, all 14 wastewater treatment facilities, 12 of the 27 power plants, and a substantial portion of public housing in the city lie in the flood plain. In addition to climate risk, New York's headline-number prosperity masks the significant income inequality across the 59 community districts and over 200 postal codes spanning its estimated 300 square miles (Fig. 1, next page).



The High Line is a 1.45-mile-long park created on an abandoned railway. The structure features a green roof system enabling the maximum collection and storage of water for its 110,000 plants, which were sourced locally. Favoring low-maintenance and drought-tolerant plants, the High Line now features over 500 species of plants and trees, which are maintained by Friends of the High Line in partnership with the NYC Department of Parks and Recreation.

The connection between the environment and social inequality is important to the analysis of New York’s sustainability, the resilience of its social fabric, and its expected response to the twin climate and COVID-19 crises. Based on a study published in the journal *Human Ecology*, Superstorm Sandy, which took place in 2012, hit most heavily those census tracts that were more likely to be populated by individuals over the age of 65, under 18, and with lower incomes. In terms of race and ethnicity, flooded areas were more likely to have white and black residents than Asian or Latino, and the most vulnerable of each of these racial or ethnic groups were the most likely to be affected.³¹ Last year’s Hurricane Ida had a similar disproportionate impact on lower-income and immigrant communities across the Bronx, Brooklyn, Queens, and Staten Island.³²

Despite these challenges, New York City has long been recognized as a climate and sustainability leader, with climate and social issues coming sharply into focus as the city responds to and rebuilds after the pandemic.

1. Pandemic impact

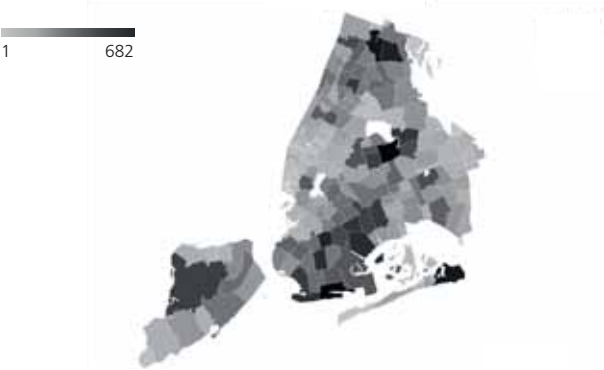
Given what we know now about the rapid spread of COVID-19 in highly populated areas, it is no surprise that New York City quickly became the epicenter of the virus in the spring of 2020. While the city responded to the health crisis, the pandemic impacted its highly vulnerable communities the most. The most diverse and lowest-income areas in northern Manhattan and Chinatown, the Bronx, Queens, and parts of Brooklyn had the highest death rates (Fig. 2). Communities of color, as well as women, also faced higher initial unemployment rates and were more likely to be food-insecure and have trouble paying rent in the first few months of the pandemic, according to data from the US Census Bureau. In addition to the overall health crisis, these dynamics created an imperative for New York City to center social issues in their response.

Just as COVID rates had appeared to normalize in the late summer of 2021, the city was hit with a new storm: Hurricane

Figure 2

Lower-income and most ethnically diverse areas of NYC hit hardest by COVID-19

Total COVID-19 death rate (number of deaths per 100,000 people) by zip code

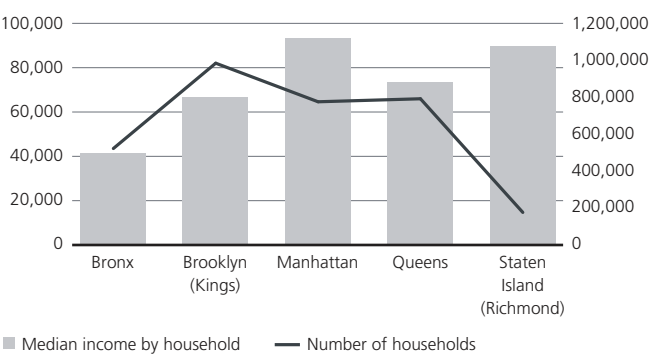


Source: NYC Health, COVID-19 Data, UBS, data as of September 2021, accessed on January 11, 2022.

Figure 1

Despite NYC’s overall prosperity, median income varies across boroughs

Median income by household, in USD (lhs); number of households (rhs)



Note: Data at county level, 2015–19
Source: US Census Bureau, UBS

Ida, which made landfall on 1 September. The storm brought a peak 3.15 inches of rain per hour, drastically exceeding the 1.75 inches per hour capacity that the sewer system could manage. It was the first-ever flash flood emergency warning issued by the National Weather Service for New York City, and tragically took the lives of 13 New Yorkers.

According to the city’s stormwater resiliency plan released in May 2021, it would cost an estimated USD 100 billion in capital improvements to enable the sewer system to process the rainfall encountered during the storm. With the New York City Panel on Climate Change projecting that New York could experience as much as 25% more annual rainfall by the end of the century, it’s no surprise why the city must be proactive in its climate-related projects and plans.³³

Indeed, while the pandemic required a short-term resetting of priorities (and an increase in the use of plastics and other non-recyclable materials), over the longer term New York continues to move forward toward its objective to become carbon-neutral by 2050, while building a fairer city.

2. New York’s response

New York City formally recognized climate change as a challenge almost 15 years ago via its “Greener, Greater New York” strategic plan, published in 2007. Since then, it has steadily expanded its scope to include environmental sustainability, economic equality, and social justice via its most recent comprehensive “OneNYC 2050” plan.³⁴ The long-term strategy consists of eight goals and 30 initiatives.³⁵ Notably, many construction and resiliency capital projects were put on hold by stop-work orders due to social distancing rules or budget constraints, as funds were re-allocated toward healthcare-related costs and demands. The priority accorded to COVID-19 response was appropriate, but the pandemic highlighted inequalities in health outcomes associated with race, class, and gender. Despite these challenges, the city was still able to move forward with many of its planned sustainability projects and goals, including those on the next page:

- Over USD 130 million in local, state, federal, and philanthropic funding for 5,000 small businesses directly impacted by COVID-19
- The expansion of NYC Care, guaranteeing low-cost and no-cost healthcare to residents
- The launch of GetFoodNYC, providing over 200 million meals to New Yorkers in need of food during COVID-19
- A return to in-person learning in the largest school district in the US, while providing 15,000 wireless-enabled iPads, remote counseling, and over 400 meal hubs for students and families in need
- A continued path to carbon neutrality from the 2019 passage of the Climate Mobilization Act (Table 1)
- The divestment of over USD 4 billion from fossil fuels while doubling pension investments in climate solutions.

3. What's next

We expect New York to continue to implement stricter climate-related standards to meet its targets, shown below. With 70% of the city's emissions derived from 1 million buildings—and half of those emissions originating from only 2% of structures—building efficiency is a top priority. Due to the postponement of several resiliency-related construction projects and an increase in the number of weather-related events, we expect the city to actively continue (and likely accelerate and expand) its USD 20 billion worth of climate resiliency projects over the next 10 years.

4. Investment implications

While different coronavirus variants have emerged over the last 18 months, upending our day-to-day lives, New York continues to lead in its vaccination rollout through citywide man-

Table 1

Climate Mobilization Act of 2019

Local Laws 92 & 94	Requires new and substantially renovated rooftops to incorporate sustainable roofing (solar or green).
Local Law 95	Requires a building energy label to be displayed on buildings including both a letter and number efficiency score (48.3% most recently receiving a D or F grade). ³⁶
Local Law 96	Establishes a long-term low-interest clean energy loan program to enable building owners the ability to comply with strict building and water efficiency requirements under Local Law 97 below.
Local Law 97	Requires all buildings over 25,000 square feet to meet carbon reduction targets.

Source: NYC Mayor's Office of Climate and Sustainability, UBS

dates. Vaccination enforcement and federal fiscal stimulus have positioned the city for an economic recovery. We anticipate Mayor Adams's administration to focus on equity and social justice in addressing climate change challenges.

Some of the city's initiatives discussed in this chapter, like building flood and sea walls or overhauling sewer systems, may require financing through additional green-labelled bonds issued by the city and its agencies. Achieving carbon neutrality by 2050 will require mitigation action in residential and commercial buildings (discussed in detail in "A city at work," page 21). For example, requiring a majority of buildings to attain a Tier 1 energy efficiency level through a mix of retrofitting and electric heating, achieving the 100% renewable energy objective by 2025, or incentivizing the use of electric vehicles creates opportunities for companies associated with greentech across sectors.

New York's climate action targets

Renewable energy

- 100% clean electricity for city government operations by 2025 and citywide by 2040
- 100 MW solar installed on city-owned buildings by 2025 and 1,000 citywide by 2030
- 50% reduction of greenhouse gas emissions from city-owned buildings by 2030 (compared to 2005)
- 500 MW energy storage citywide by 2025
- 100% net-zero new buildings by 2030

Efficient buildings

- No fossil fuel hook-ups in new constructions and major renovations by 2030
- 20% reduction in energy consumption for all NYC buildings by 2025
- Passage of landmark legislation package (Climate Mobilization Act) in 2019, which aims to reduce emissions by the city's largest buildings by 40% by 2030 and 80% by 2050

Sustainable transportation

- 80% of trips on sustainable mode (i.e., walking, biking, mass transit) by 2050, with remaining vehicular trips being zero-emission
- 100% electric city fleet by 2040
- 100% electric school bus fleet by 2035
- 1,000 curbside chargers by 2025, increasing to 10,000 by 2030
- 6,000 publicly accessible fast chargers by 2030

Divest and Invest

- Divest major pension funds from fossil fuels by 2022
- Increase investments to USD 8 billion in climate change solutions—such as renewable energy, energy efficiency, and green real estate—by 2025
- Further ramp up investments in climate solutions to USD 50 billion by 2035
- Achieve net-zero pension portfolio emissions by 2040

Other sustainability targets

- Reduce greenhouse gases associated with food the city serves by 25% by 2030, having been the first city in the US to join the Cool Food Pledge
- Support urban agriculture via 550 community gardens, 800 school gardens, and 20,000 volunteers
- Permanently transform streets and dining capabilities beyond the pandemic, including 83 miles of open streets and allowing restaurants to utilize available outdoor seating options
- Advance equity and access to parks, with 85% of New Yorkers residing within walking distance of a park by 2030
- New York City Parks Department to continue to plant an estimated 32,000 trees per year
- Achieve best air-quality ranking among major US cities by 2030
- Expand the green infrastructure program
- Expand sewer infrastructure in underserved areas
- Achieve energy-neutral wastewater resource recovery facilities by 2050

Source: New York City Office of Climate and Sustainability, UBS



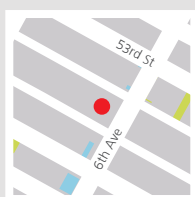


Investment ideas

Portfolio implementation guidance

Many of the industry trends identified in this report are present elsewhere in the United States. The transformation of retail commerce, for example, has been underway for nearly a decade. The adoption of new technology to disintermediate traditional modes of finance has accelerated. And the demonstrable impacts of climate change have prompted greater interest in sustainable finance. These trends are national—indeed global—in scope, but New York’s recovery from its pandemic-induced slumber will occur in the context of all three. We have included a list of exchange-traded funds that are targeted to capitalize on the secular transformation in our companion report entitled “Implementation ideas: Future of New York.”

For investors interested in a more direct link to the city’s recovery, we recommend investments in New York real estate and in the municipal bonds issued by a variety of public agencies.



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Real estate investment trusts

After nearly grinding to a halt in the early days of the pandemic, New York's residential housing market showed renewed signs of life in 4Q20, strengthening rather abruptly in the summer of 2021. Sales volumes rose while inventory plummeted.³⁷ The rebound was evident in both the mainstream and luxury markets. The rental market followed suit, with occupancies, rents, and net absorption all improving dramatically. Landlord concessions gradually disappeared by 4Q21. More spacious apartments saw the steepest decline in vacancy and the sharpest growth in rents, as individuals returning to the city took advantage of favorable pricing for larger units and sought larger spaces to accommodate a hybrid work schedule.

Commercial real estate has been slower to bounce back. Hybrid work arrangements and the emergence of the omicron variant have posed significant obstacles to a return to pre-pandemic status quo. For the foreseeable future, we believe the New York office market will be somewhat bifurcated, with newer projects and renovated buildings having a distinct advantage. Improved ventilation, flexible workspaces, and touchless controls will all prove to be attractive amenities to prospective tenants.

We believe investments in REITs are a tax-efficient way to invest in a variety of commercial and residential real estate properties including office building, apartments, warehouses, shopping centers, data centers, wireless towers, and healthcare facilities. REITs are attractive to many investors as they are required to distribute a minimum of 90% of their pretax income as dividends. However, REITs operate in a capital-intensive business, so regular access to the capital markets is required. As a yield-oriented investment, REIT prices also can move inversely with the direction of interest rates. In today's environment, where the Fed is actively contemplating higher short-term rates, investors must be prepared to withstand some volatility. To the extent they are able to do so, and to ride out what may be a bumpy 2022, REITs with a concentration to New York real estate can offer an attractive risk-adjusted return over a longer time horizon.

Municipal bonds

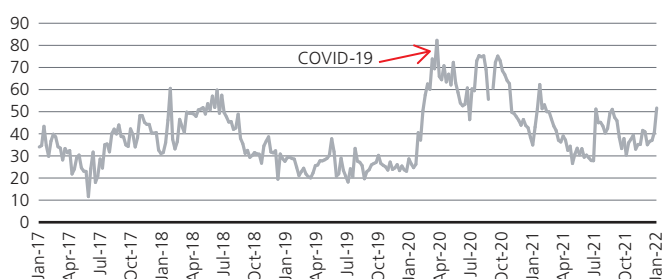
The pandemic took its toll on a wide variety of public agencies and not-for-profit institutions in the city. However, once hospitalization rates subsided and federal aid arrived, public agencies and not-for-profit institutions exhibited a surprising degree of agility in the recovery of both their operations and their balance sheets. There are a few notable exceptions, but, by and large, the financial position of many agencies is remarkably stable two years after the onset of COVID-19.

Generally speaking, New York's bond issuers continue to demonstrate sound credit profiles. In most instances, federal aid provided the financial cushion needed to ensure that critical public services were maintained in the face of higher demand. The market responded accordingly with more aggressive bids and correspondingly tighter spreads. The City of New York's general obligation bonds provide an example. After an extraordinary increase in yields, spreads compressed through 2021 (Fig. 1).

Figure 1

City of New York general obligation bond spreads for 30-year tenor, Jan 2017–Jan 2022

Spread, in bps



Source: Bloomberg, UBS, as of 27 January 2022

In the midst of volatility, we believe that relative value opportunities among the most frequently traded New York-based borrowers are still identifiable. These include six obligors that have accounted for roughly 50% of trading volume in New York names over the past three months, which suggests there is sufficient liquidity in each of the names to allow investors access in both the primary and secondary markets.

Taxable munis and sustainable investments

Taxable municipal bonds are popular among investors who are seeking higher yields and are not subject to US taxation. Global non-US investors and pension funds both participate in the market for taxable munis. Among other advantages, municipals historically exhibit lower default rates than US corporate securities but often provide a higher yield than their corporate counterparts.³⁸ The Port Authority of New York and New Jersey, the Metropolitan Transportation Authority, and New York State are all active issuers of taxable securities with yields that may appeal to global investors.

The municipal bond market has also gravitated to sustainable investing in recent years. Municipal green bonds are now commonplace. The market has not yet developed to the point where investors are willing to pay a premium for the green designation, so the green label is effectively offered for free. And while third-party verification is still relatively rare, the use of proceeds is clearly identified in most instances.

Volatility begets opportunity, and the recent back-up in yields offers investors an opportunity to buy into the tax-exempt market at a better entry point. Uncertainty surrounding Fed rate hikes is often a source of volatility for the municipal bond market, and 2022 is apt to prove no exception. Against that backdrop, investors should not refrain from seeking opportunities to deploy fresh capital at more attractive yields.

Companion report: For a list of REITs with exposure to the New York City real estate market and other detailed recommendations, please refer to "Implementation ideas: Future of New York."

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