

Boston's Economy 2023



The Boston Planning & Development Agency

We strive to understand the current environment of the city to produce quality research and targeted information that will inform and benefit the residents and businesses of Boston. Our Division conducts research on Boston's economy, population, and commercial markets for all departments of the BPDA, the City of Boston, and related organizations.

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Introduction

Boston saw another strong year of economic growth in 2022, continuing a rapid recovery from the economic turmoil brought on by the pandemic. Boston added just over 18,000 jobs between December 2021 and 2022, leaving the city roughly 5,000 jobs short of February 2020 employment levels. Growth in employment and economic activity slowed somewhat compared to the very rapid rates of catch-up growth observed in the direct aftermath of the pandemic-induced downturn, as the city's economic performance on many metrics began to near pre-pandemic levels.

Inflation at the national level remained high throughout 2022, though showed signs of cooling in the second half of the year. The Consumer Price Index (CPI) at the national level rose 6.4 percent between January 2022 and January 2023, and was up 16 percent from January 2020. Prices in the Boston area rose at a pace similar to national rates, though regional price growth was particularly rapid in the energy sector. The Federal Reserve's efforts to contain inflation by raising interest rates have not yet dented Boston's strong labor market recovery, though impacts have been more visible in the housing sector.

Employment growth in Boston continues to come both from recovery in the sectors hardest hit by the COVID-19 recession, such as Accommodation and Food Services, as well as continued growth in core sectors such as Professional and Technical Services, Information, and Health Care and Social Assistance that were less negatively impacted by

the pandemic. The Accommodation and Food Services sector added 9,404 jobs in 2022 and has now recovered 32,609 of the 40,236 jobs lost between February and April of 2020. Professional and Technical Services added 5,891 jobs in 2022 and employment in the sector in December 2022 was 9.1 percent higher than it was in February 2020. The strong employment growth in Boston and the broader region helped bring the Boston resident unemployment rate down to 3.0 percent as of December 2022, returning to pre-pandemic levels after spiking to 15.8 percent in the spring of 2020.

While the number of residents employed in Boston establishments is nearing pre-pandemic levels, commutes into the city in December 2022 remained 41.4 percent below their level in the same month in 2019. The number of commuters in the second half of 2022 saw only a modest increase over the second half of 2021, confirming that remote and hybrid work arrangements established during the pandemic are remaining in place. This decline in commuting is also reflected in MBTA ridership, with validations at gated stations still down 41 percent in December 2022 compared to the same month in 2019.

Non-commuting trips to Boston saw a far more robust recovery in 2022, and were at 98.2 percent of 2019 levels by the end of the year. Passengers at Logan Airport and occupancy at Boston hotels increased substantially over 2022 and are again nearing 2019 levels.

Consumer spending within the city has recovered fully, tracking roughly evenly with 2019 monthly spending throughout the year after adjusting for inflation. Many of the city's neighborhoods are seeing spending well above pre-pandemic levels, though Downtown and the South Boston Waterfront continue to lag behind.

The decline in commuting has weakened demand for commercial real estate, with office vacancy reaching 10.8 percent in the fourth quarter of 2022 and an additional 4.7 percent of inventory available for sublease. Life Sciences continued to be a bright spot, with 773,000 square feet of positive absorption of lab space in 2022. There continues to be a strong commercial pipeline, with the BPDA approving 4.7 million square feet of lab space in 2022, and with 5.4 million square feet of commercial space receiving construction start permits.

On the residential side, rents rose sharply across Boston neighborhoods, increasing 14.2 percent after more modest increases in the prior year. Vacancy in multi-family fell back to pre-pandemic levels by the third quarter of 2021 and remained low throughout 2022. The average annual sales

price was higher than the year before, though the market showed signs of cooling over the second half of the year. Housing unit completions fell compared to 2021, but the number of units permitted for construction rose to 3,847, the highest number since 2018.

Taken together, the data presented in this report show a city moving forward from the economic turmoil brought on by COVID-19. Inflation and uncertainty at the national level, combined with the changing frequency of commuting raise concerns for the city heading into 2023, but Boston's diverse economic base has again proven resilient to a period of substantial upheaval, and will continue to evolve to meet these new challenges.

Boston's Gross City Product (GCP)

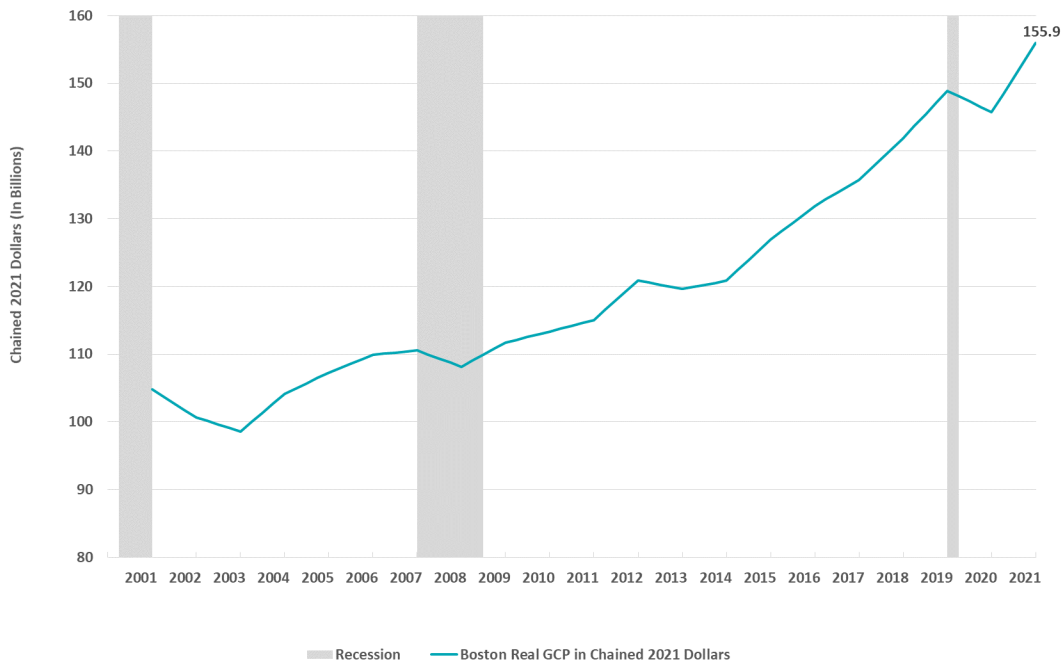
In 2021, Boston's Gross City Product (GCP) reached \$155 billion (in 2021 chained dollars), a 7 percent increase from 2020 and indication of a strong recovery from the COVID-19 pandemic induced economic recession. Boston's 2021 GCP also surpassed the 2019 level, resuming the city's growth path from the prior decade. Figure 1 summarizes Boston's annual GCP from 2001 to 2021.

As the economy reopened in 2021, in-person services sectors, such as Accommodation and Food Services, Arts, Entertainment and Recreation, and Transportation and Warehousing, rebounded

sharply with annual growth rates between 30 to 60 percent. However, economic output was still 20 percent lower than the 2019 level, and with 2022 data expected to reflect slowing overall growth, it remains unclear when output in in-person service sectors will return to pre-pandemic levels. The city's professional and financial services sectors, such as Information, Professional, Scientific, and Technical Services, and Finance and Insurance, showed resilience to the economic recession with modest but positive real GCP growth in 2020. In 2021, these sectors continued their growth trend and contributed more than half of the city's 7 percent real GCP increase from 2020 to 2021.

FIGURE 1

Boston Annual GCP 2001-2021 (Millions of 2021 Chained Dollars)



Source: U.S. Bureau of Economic Analysis (BEA), and Massachusetts Executive Office of Labor and Workforce Development, (EOLWD), BPDA Research Division Analysis.

The city's 2022 GCP has not yet been published, but moderate GDP growth in 2022 at the federal level (2.1%) and state level (2.0%) as shown in Figure 2 suggests that Boston may follow a flatter growth trajectory in 2022. Boston's 2022 GCP growth may also be slowed by the local economy's

concentration in the professional and financial services sectors, which experienced slower growth at the national level in 2022 compared to their outstanding performance in the previous two years.

FIGURE 2
GDP Growth Rate & Recessions



Source: U.S. Bureau of Economic Analysis (BEA), and Massachusetts Executive Office of Labor and Workforce Development, (EOLWD), BPDA Research Division Analysis.

Inflation

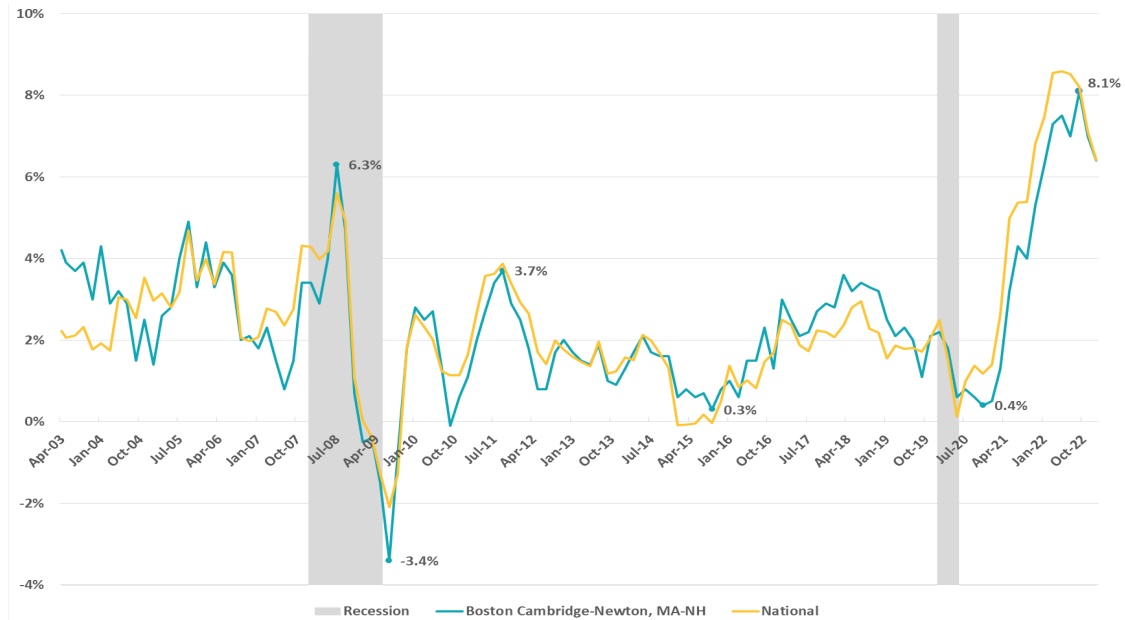
From 2010 through 2020, the BLS Consumer Price Index (CPI) shows that prices in Metropolitan Boston increased at an annual average rate of 1.8 percent, outpacing the national average rate of 1.2 percent. In 2021 and 2022, a robust labor market, an increase in consumer demand for products, consecutive stimulus packages, and pandemic-related supply chain disruptions exerted upward pressure on prices.

followed by accelerating price growth through the end of 2022. National inflation, measured as the change in the CPI from 12 months prior, peaked in May 2022 at 8.6 percent, while Boston’s annual CPI growth peaked in September 2022 at 8.1 percent. The Federal Reserve’s contractionary policies pushed interest rates higher, helping to rein in inflation. By January 2023, the consumer price index for both the nation and the Boston metropolitan area had decelerated, with prices both locally and nationally up 6.4 percent from the prior January.

2021 began with relatively slow price growth

FIGURE 3

Boston Cambridge-Newton, MA-NH and National Inflation Rate from April 2003 to January 2023



Source: U.S Bureau of Labor Statistics, BPDA Research Division Analysis
 *12-month percentage change, consumer price Index (CPI-U), not seasonally adjusted

The annual growth in the CPI presented in figure 3 is the most commonly cited measure of the pace of inflation, but looking at changes over shorter time horizons can also be informative in times of price volatility. The BLS collects CPI data

for approximately 80,000 goods and services. Prices are collected each month in 75 urban areas across the country from about 6,000 housing units and approximately 23,000 retail establishments — department stores, super-

markets, hospitals, gas stations, and other types of stores and service establishments.¹ These prices are then weighted and averaged together to form a market basket, whose indexed price level is measured by the CPI.

By comparing the price of this market basket between a pair of months, we can determine the change in the total price level between those two months. Picking months twelve months apart, as is typical, helps to abstract away from seasonal factors, smooth out month-to-month price volatility and offer an intuitive interpretation as a rate of annual change. But in times of price volatility this can also obscure the time trend of price growth.

Figure 4 depicts 1-month changes in the price index from the beginning of 2019 for the United States and the Boston area. These month-to-month changes, shown here without seasonal adjustment, display substantial volatility, but were generally consistent with the goal of a stable price level until the onset of the pandemic. Monthly

prices dipped at the onset of the pandemic, increased quickly as economic activity resumed, but saw moderation through the summer of 2020. The graph shows two periods of accelerating inflation, first in the fall and winter of 2020, and then again starting in the summer of 2021 and continuing through the first half of 2022. The second half of 2022 saw substantially slower price growth than the first half. Whether this slow price growth can be maintained and brought in line with the Federal Reserve’s goal without further monetary tightening remains a question.

These monthly measures help to emphasize that the most rapid period of price growth is likely behind us, where the 12-month changes, incorporating the rapid price growth experienced in the first half of 2022, still show inflation readings close to recent highs. Both graphs reflect that substantial price growth has occurred, with January 2023 prices 6.4% higher than a year earlier, and up 16% nationally, and 13.7% locally compared to January 2020.

FIGURE 4 Boston Cambridge-Newton, MA-NH and National monthly inflation from January 2019 to January 2023

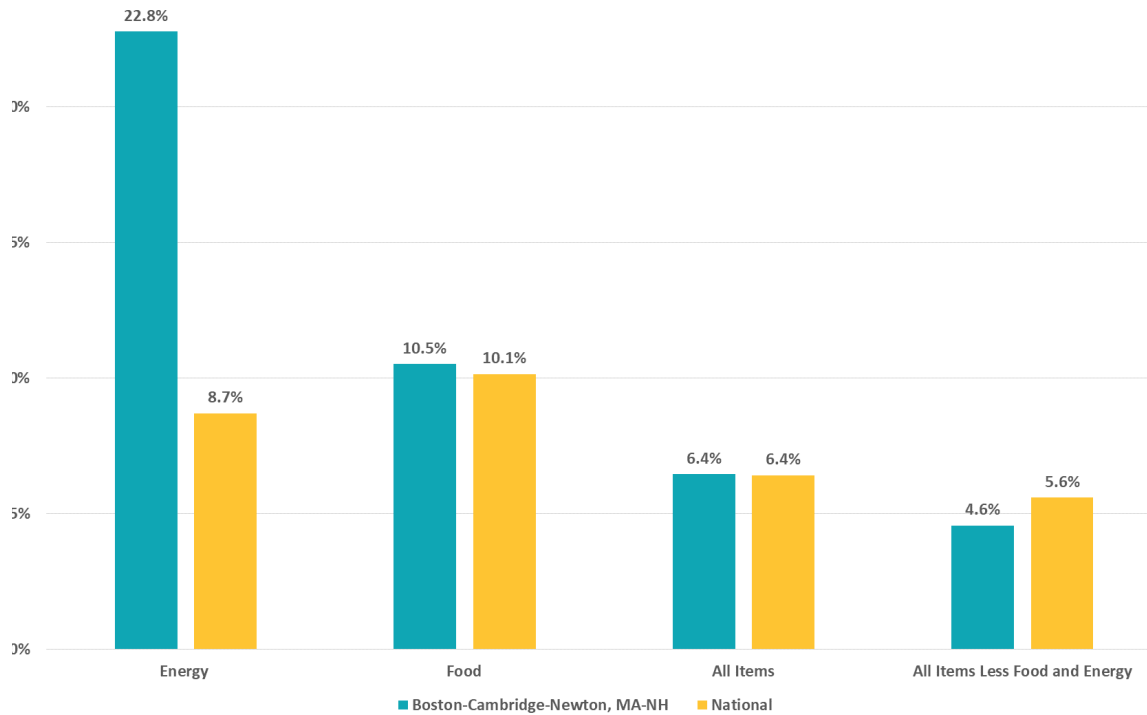


Source: U.S Bureau of Labor Statistics, BPDA Research Division Analysis
 *One-month percentage change, consumer price Index (CPI-U), not seasonally adjusted

Over the past year, Boston saw larger increases in food and energy costs than the nation. From January 2022 to January 2023, food prices increased 10.5 percent in Boston and 10.1 percent

nationwide. During the same period, national energy costs increased by 8.7 percent; however, the Boston Metropolitan region saw a higher energy inflation rate of 22.8 percent.

FIGURE 5 Boston Cambridge-Newton, MA-NH and National Annual Inflation Rate by category from January 2022 to January 2023



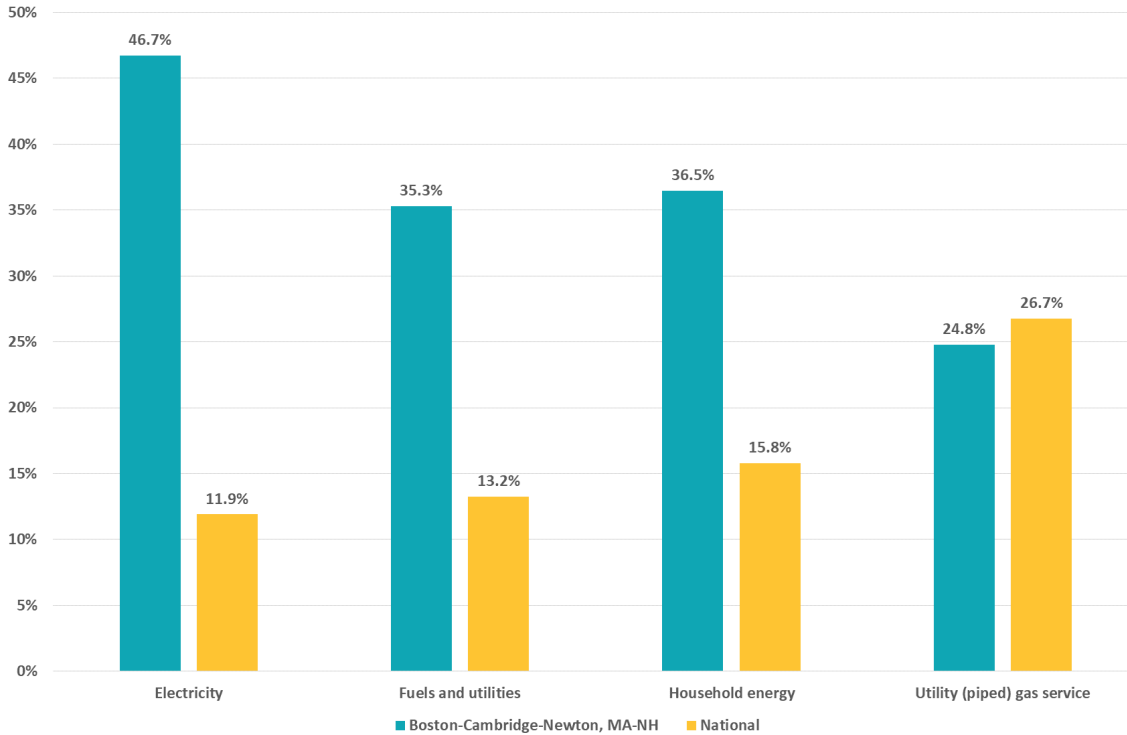
Source: U.S Bureau of Labor Statistics, BPDA Research Division Analysis
 *12-month percentage change, consumer price Index (CPI-U), not seasonally adjusted

Fuels and utilities, utility (piped) gas service, electricity, and household energy all increased faster in the Boston metropolitan area. The price

of electricity rose by 47 percent in Boston, but only 12 percent in the nation overall.

FIGURE 6

Boston Cambridge-Newton, MA-NH and national Energy Inflation Rate from January 2022 to January 2023.



Source: U.S. Bureau of Labor Statistics, BPDA Research Division Analysis
*12-month percentage change, consumer price Index (CPI-U), not seasonally adjusted

According to the U.S. Energy Information Administration (EIA), Massachusetts generates 77 percent of its electricity from natural gas - the third highest share in the country.² The COVID outbreak and Russian invasion of Ukraine disrupted the global oil and gas market, resulting in an increase in energy prices. Boston is located at the end of the natural gas pipeline network, making it difficult to transport additional gas when demand increases. To prevent price spikes, Massachusetts conducts

biannual energy auctions which cap energy prices between auctions. Despite escalating prices elsewhere in 2021, energy costs remained stable. In 2022, when energy prices in Massachusetts caught up to the market rate, they soared. Boston residents enrolled in Boston’s Community Choice Energy program, which used the city’s collective buying power to negotiate a low electricity supplier rate for a longer term, saw far smaller increases.

Employment

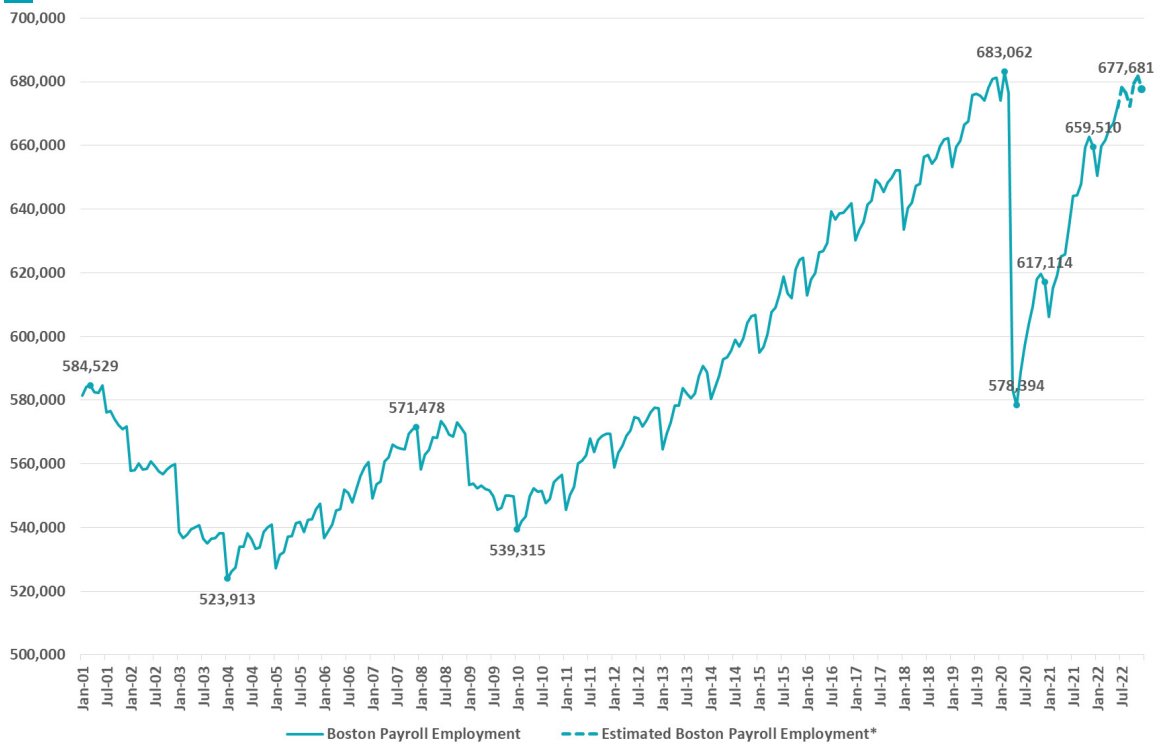
Employment Located in Boston

Employment in Boston saw another strong year of recovery in 2022, adding 18,171 payroll jobs between December 2021 and 2022, an increase of 2.8 percent. The 677,681 payroll jobs in December 2022 are just 0.8% shy of the pre-pandemic level from February 2020. Boston lost just over

100,000 payroll jobs between February and April of 2020, and has seen steady recovery since the summer of 2020. The city had recovered 37 percent of the net jobs lost by December 2020, and that share had risen to 77.5 percent by December 2021.

FIGURE 7

Payroll Employment in Boston, 2001 to 2022



Source: Massachusetts EOLWD, BPDA Research Division Analysis.

* Payroll employment for the second half of 2022 is estimated using Current Employment Statistics for Boston-Cambridge-Newton MA NECTA Division and ratios of city and NECTA division employment from recent QCEW employment data. See appendix for a description of the estimation methodology.

Nearing a full recovery just under three years after the onset of the pandemic-induced recession stands in sharp contrast to the city's experience in the prior two economic disruptions in 2001 and 2007. December 2022 marks the thirty-fourth month since February 2020, and the city stands 0.8% below its prior peak employment. During the 2001 "Dot-Com" recession the city reached its lowest employment

level 34 months after the onset of the recession, in January 2004 at 10.4% below the prior peak. Employment in Boston had not fully recovered by the onset of the Great Recession in 2007. That recession again saw a long period of depressed employment, with employment still 3.0% below peak 34 months into the recession, and only returning to pre-pandemic peak employment after 54 months.

FIGURE 8 Boston Employment Relative to Peak



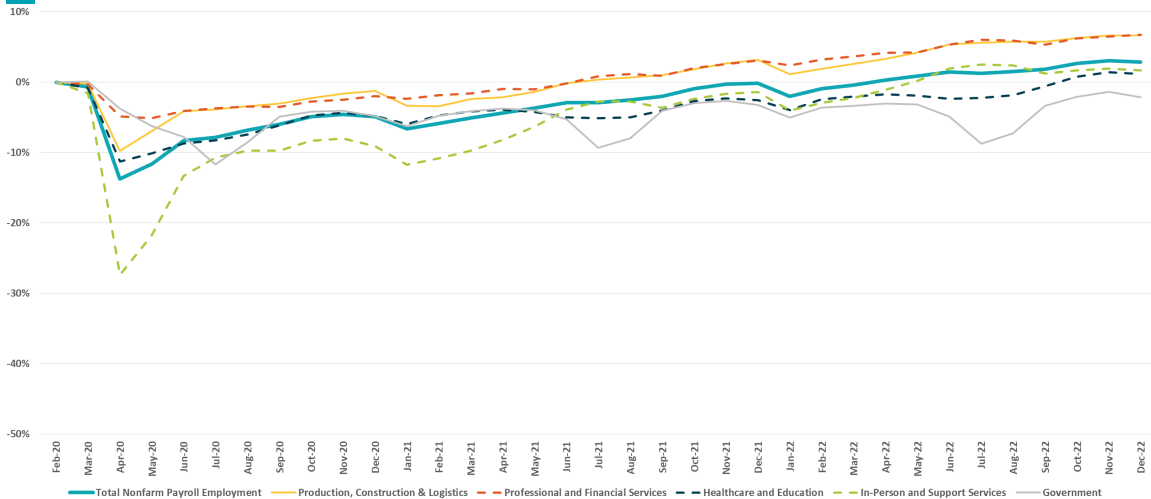
Source: Massachusetts EOLWD, BPDA Research Division Analysis.

Boston's rapid recovery from the COVID-19 recession has not been unique. In fact, payroll employment in December 2022 in the United States as a whole stood 2.9 percent above its pre-pandemic peak. At both the national and local level the bulk of employment losses were driven by jobs in in-person and support services sectors: Accommodation and Food Services, Arts, Entertainment and Recreation, Retail Trade, Administrative and

Waste Management Services, and Other Services such as Personal Care Services. These sectors together saw payroll employment fall 27.4 percent at the national level between February and April 2020, but exceed their national pre-pandemic peak by May 2022. The only sector still lagging behind February 2020 employment at the national level as of December 2022 was Government employment, down 2.1 percent.

FIGURE 9

Payroll Employment by Sectoral Group, United States, 2020 to 2022



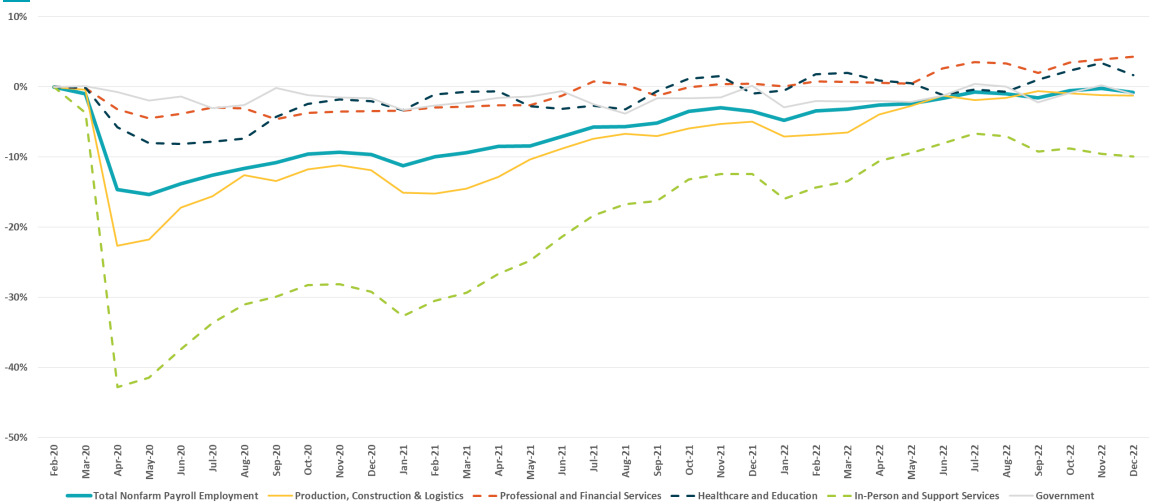
Source: U.S. Bureau of Labor Statistics, Current Employment Statistics. BPDA Research Division Analysis.

Employment in in-person and support services shed 42.8 percent of employment between February and April of 2020. These sectors remain 9.9 percent below their February 2020 peak as of

December 2022, even as other sector groupings like Professional and Financial Services (up 4.3%) and Healthcare and Education (up 1.7%) have surged past pre-pandemic levels.

FIGURE 10

Payroll Employment by Sectoral Group, Boston, 2020 to 2022



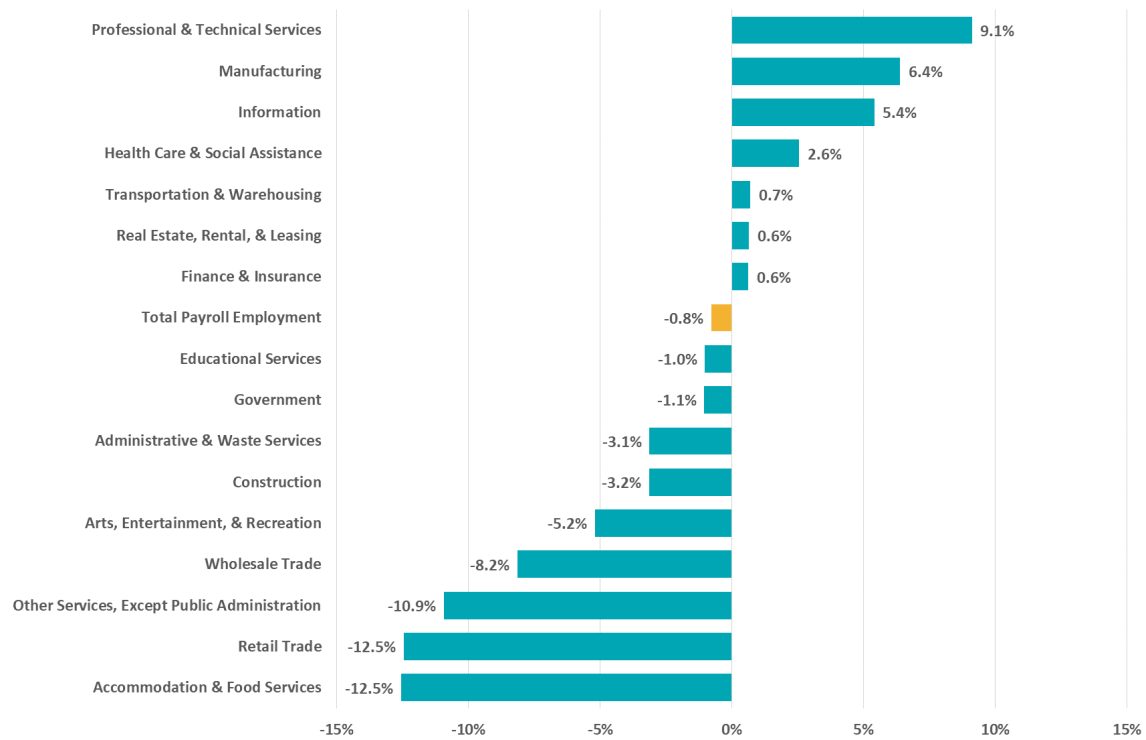
Source: Massachusetts EOLWD, BPDA Research Division Analysis.

Within the larger in-person and support services sector grouping, Accommodation and Food Services and Retail Trade (both down 12.5%) and Other Services (down 10.9%) remain further from their pre-pandemic peak than Administrative and Waste Management Services, which is down only 3.1% from peak. Payroll employment in Profes-

sional, Scientific and Technical Services in December 2022 stood 9.1% above its pre-pandemic level, with Manufacturing (6.4%), Information (5.4%) and Health Care and Social Assistance (2.6%) also seeing job increases over February 2020.

FIGURE 11

Change in Payroll Employment, February 2020 to December 2022



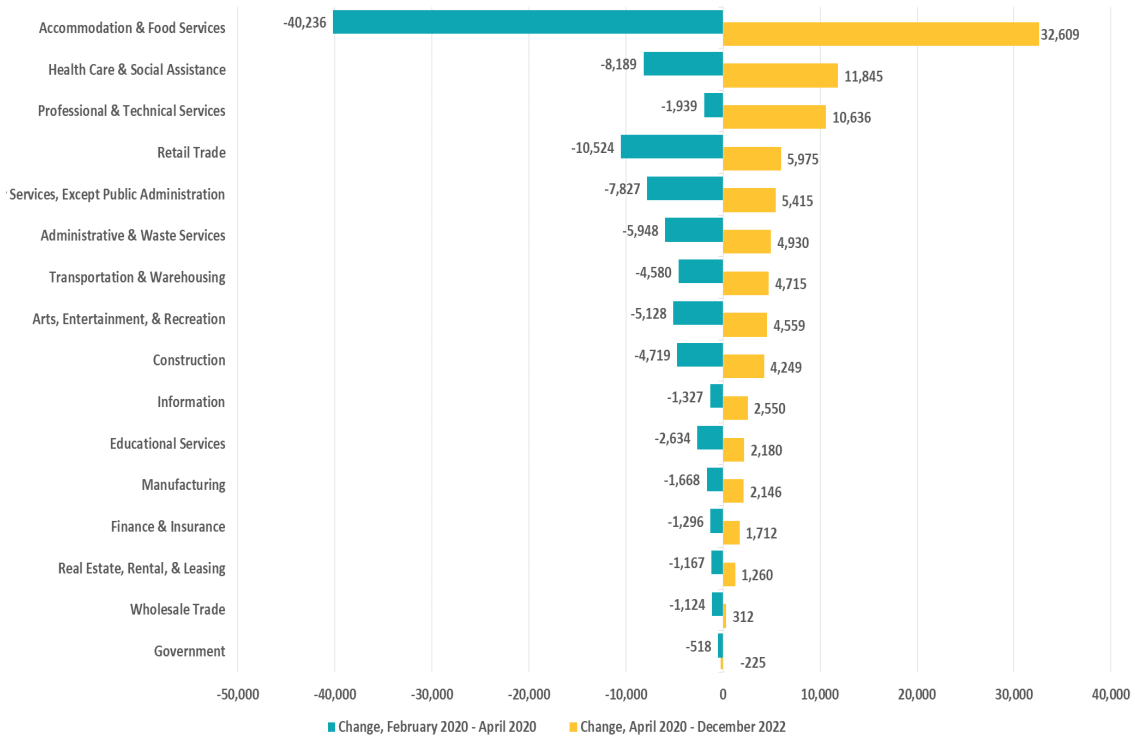
Source: Massachusetts EOLWD, BPDA Research Division Analysis.

For Professional, Scientific and Technical Services and Information these jobs gains reflect the fact that these sectors lost few jobs at the outset of the pandemic. Jobs in these sectors are more likely to be able to be performed remotely, and consequently these sectors saw few layoffs in the

early pandemic. Job gains have been led by Scientific Research and Development (up 36 percent since February 2020), Management and Technical Consulting Services, Software Publishing, and Computer Systems Design and Related Services.

FIGURE 12

Pandemic Losses and Subsequent Gains in Payroll Employment



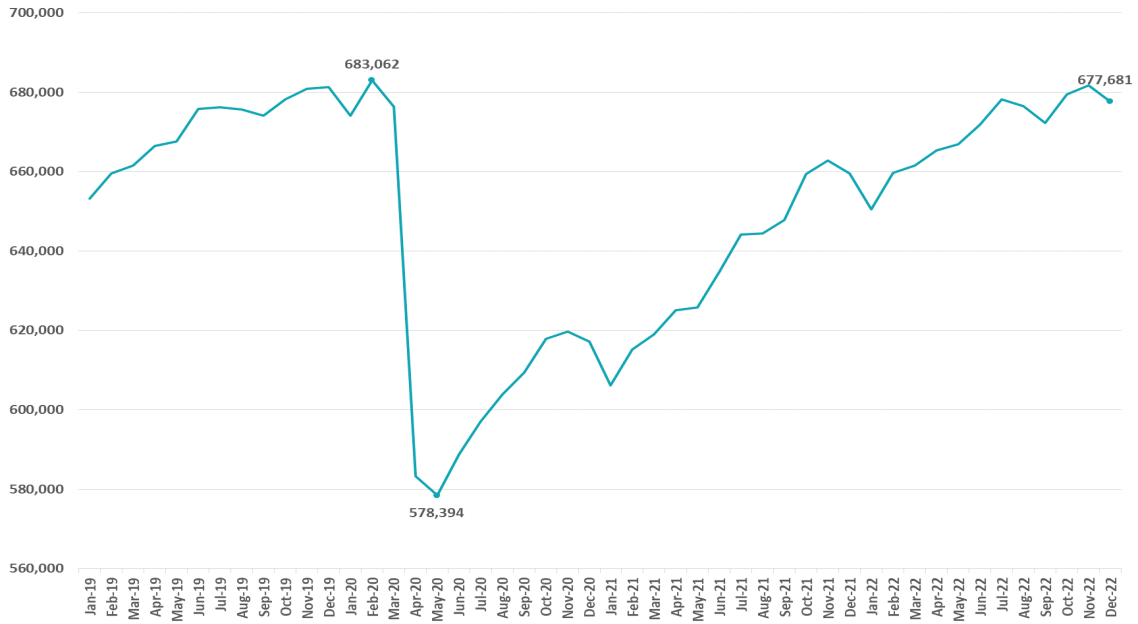
Source: Massachusetts EOLWD, BPDA Research Division Analysis.

Accommodation and Food Services has added the most jobs since April 2020, gaining 32,609 jobs, but remains over 7,000 jobs short of pre-pandemic employment. Within that sector, the Food Services and Drinking Places industry has been the locus of the largest employment fluctuations, with citywide employment tracking month-to-month dynamics in the industry closely. Employment in Food Services and Drinking Places plummeted 68.4 percent between Feb-

ruary and April of 2020, shedding over 34,000 jobs. Employment grew in the summers of 2020 and 2021, holding most of those gains through fall but seeing employment erode during the winter months, when poor weather and spikes in COVID case counts reduced demand for dining at restaurants. Employment gains in the summer of 2022 were more modest than the prior years, but held up better through December.

FIGURE 13

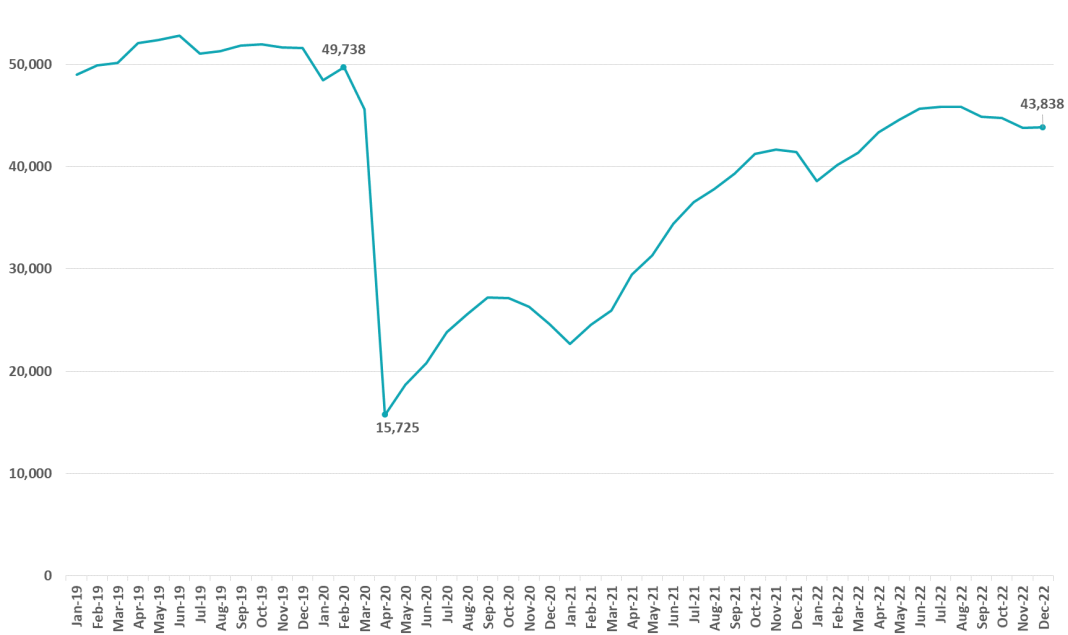
Total Payroll Employment: Boston



Source: Massachusetts EOLWD, BPDA Research Division Analysis.

FIGURE 14

Payroll Employment in Food Services and Drinking Places



Source: Massachusetts EOLWD, BPDA Research Division Analysis.

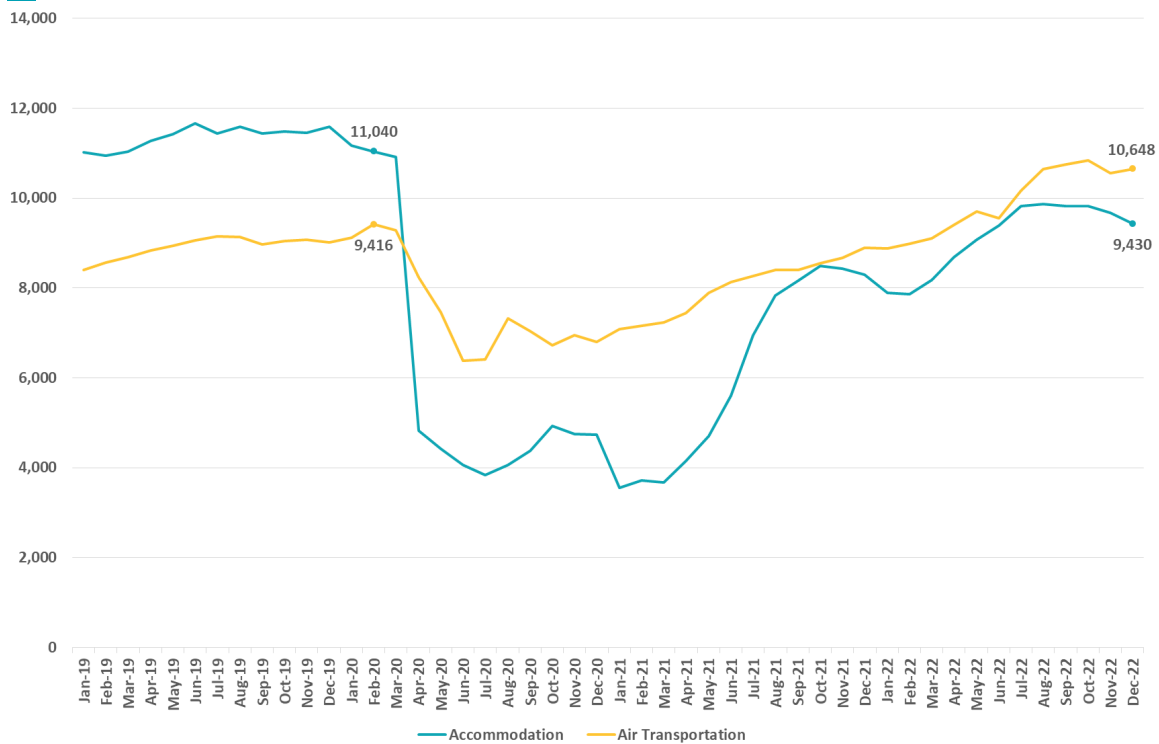
Employment in the Accommodation industry was slower to begin recovery, and remains 14.6 percent below pre-pandemic levels. As discussed later in this report, hotel occupancy was down substantially throughout most of 2020 and 2021, but moved closer to seasonal pre-pandemic occupancy levels beginning in the fall of 2021. This coincides with some Accommodation employment returning in the summer and fall of 2021, with employment continuing to see modest gains through 2022. Whether the missing jobs in

Accommodation will return remains in question, as some hotels that moved towards business models requiring more limited staffing during the pandemic may retain those levels even at full occupancy.

Like Accommodation, Air Transportation suffered steep employment losses at the outset of the pandemic, but employment has now eclipsed pre-pandemic levels even as Logan Passenger volume, discussed later in this report, remains just shy of 2019 levels.

FIGURE 15

Payroll Employment in Tourism and Travel Related Industries



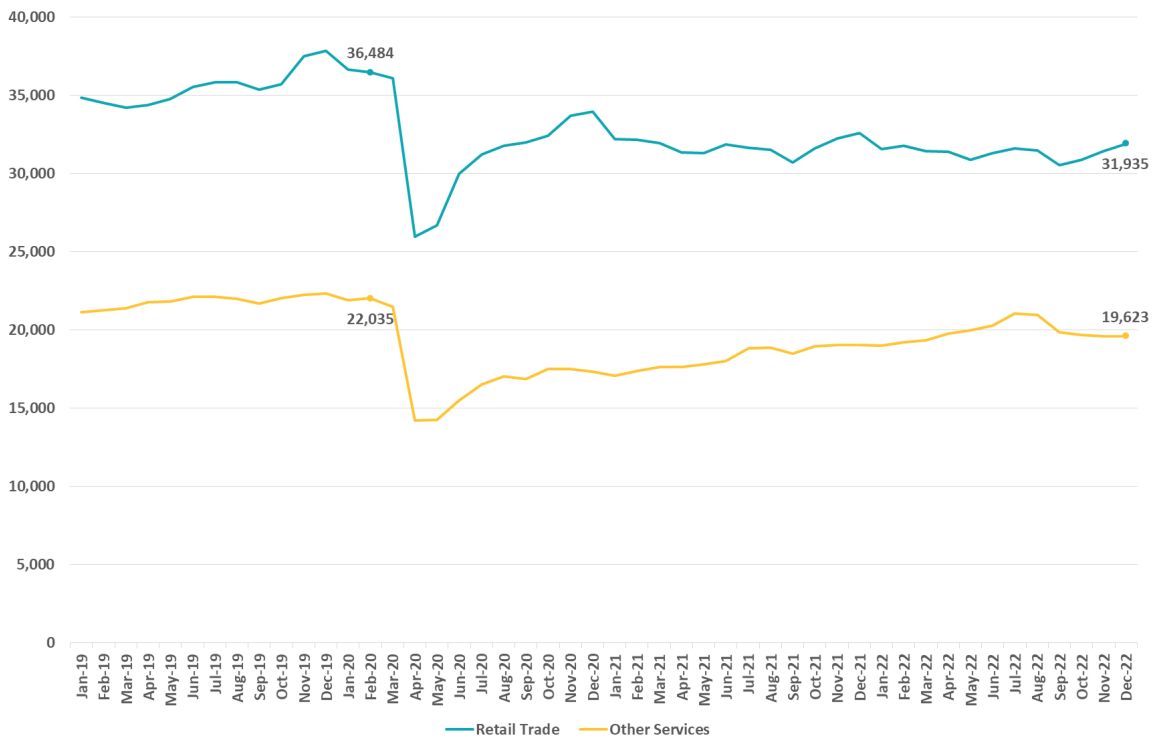
Source: Massachusetts EOLWD, BPDA Research Division Analysis.

Other service sectors in Boston have seen less recent recovery, raising questions as to whether their current employment levels represent a “new normal.” Payroll employment in Retail Trade fell 28.8 percent between February and April 2020, shedding just over 10,000 jobs. Over 6,000 of those jobs had returned by September 2020, when employment reached 32,018. More than two years later, employment in Retail Trade as

of December 2022 remains virtually unchanged. “Other Services” which includes personal care and repair/maintenance services, saw employment fall by roughly a third at the outset of the pandemic, and after recovering roughly half that loss by the end of 2020 has made only slow upward progress through the end of 2022, with employment still down 10.9 percent.

FIGURE 16

Payroll Employment in Retail Trade and Other Services



Source: Massachusetts EOLWD, BPDA Research Division Analysis.

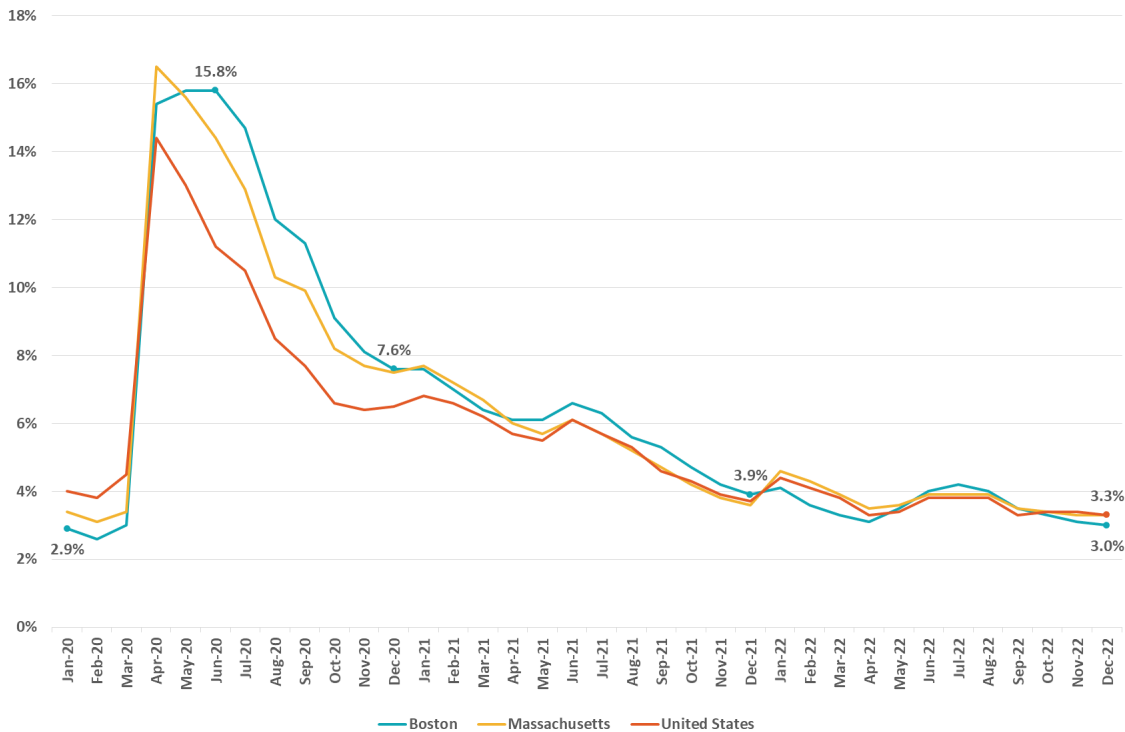
Boston Resident Unemployment

The unemployment rate among Boston residents returned to its pre-pandemic level by the end of 2022, registering 3.0 percent in December. Unemployment stayed within a narrow band between 3.0 and 4.2 percent throughout the year, a marked change from the prior two years of elevated unemployment.

Prior to the pandemic the monthly unemployment rate for Boston residents had remained below 4 percent since the summer of 2016 and below 5 percent since the summer of 2015. This unprecedented run of stable low unemployment came to an abrupt end with the onset of the

pandemic, when unemployment in the city spiked to 15.4 percent in April 2020, and then to 15.8 percent the following two months. The unemployment rate in Boston remained higher than state and national unemployment rates throughout 2020, reflecting greater declines in employment in Boston’s service sectors, and the concentration of residents in those sectors. The unemployment rate in Boston has tracked state and national levels for most of the past two years, with state and national unemployment ending the year at 3.3 percent compared to Boston’s 3.0 percent.³

FIGURE 17
Monthly Unemployment Rate, 2020 to 2022



Source: Massachusetts EOLWD, BPDA Research Division Analysis

The resident unemployment rate measures the share of Boston’s labor force that is unemployed. The labor force is made up of employed residents as well as the unemployed – those who are not employed but actively searching for work or on temporary layoff. The labor force shrank substantially at the outset of COVID-19, with roughly 13,000 residents leaving the labor force between the first and second quarters of 2020. The size of the labor force fluctuates seasonally, as some younger residents who are not participating in the labor market during most of the year look for or find jobs during the summer. This summer bump pushed the size of the labor force back up to its Q1 level in Q3 of 2020, but subsequent quarters saw the number fall back below pre-pandemic levels, and the labor force remained down roughly 5,000 residents in the fourth quarter of 2022.

population growth or loss. Boston’s population as measured by the Census Bureau’s population estimates at the city and county levels fell in the two years following the pandemic, which put a drag on the size of the labor force even as labor force participation among residents returned towards pre-pandemic levels. Slowing immigration at the national level hurt Boston, as the city has relied on immigration as a key driver of population growth over the past few decades. People responded to the health risks and additional care responsibilities brought on by COVID by pulling back on labor force participation, though national data suggest many of those who had left the labor force for these reasons had returned by the end of 2022. COVID also accelerated retirements for those in older age groups which impacted Boston’s labor force growth, though the aggregate impact was more limited in Boston than elsewhere given that younger workers are overrepresented in Boston’s resident labor force.

The size of the local labor force is affected by a number of factors. One of the key drivers is

FIGURE 18

Boston's Labor Force by Status 2020 to 2022



Source: Massachusetts EOLWD, BPDA Research Division Analysis

Mobility and Travel

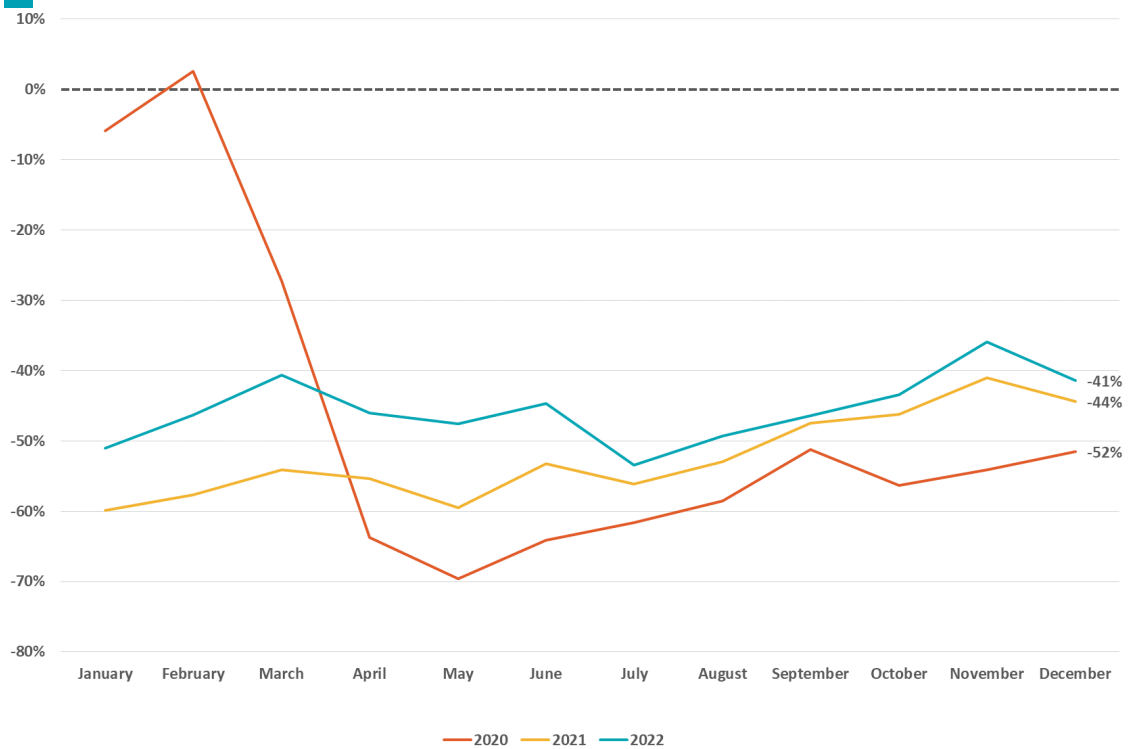
Commuting Patterns

After falling off sharply at the start of the pandemic and recovering slightly through 2020 and 2021, numbers of commuting trips to Boston from other towns have flattened somewhat, perhaps reflecting a more permanent shift towards remote

and hybrid work. Boston's outside commuting levels ended 2022 41.4 percent below December 2019 levels.

FIGURE 19

Commuters to Boston, 2020-2022, Relative to Same Month in 2019



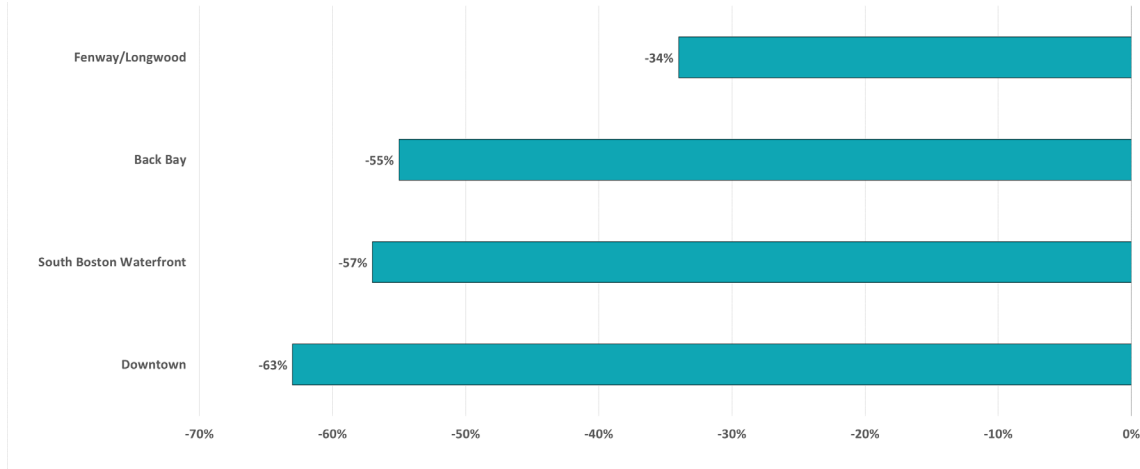
Source: Cuebiq mobility data. Cuebiq collects first-party data from anonymized users who have opted-in to provide access to their location data anonymously, through a GDPR-compliant framework. To preserve privacy home and work locations are aggregated to the census-block-group level.

All of Boston's commercial hubs continued to have relatively low numbers of outside commuting trips in 2022 compared to 2019, but Downtown has seen the least recovery in commuting levels, averaging 63 percent below 2019 levels. Fenway/Longwood saw the most recovery in numbers of

outside commuters among Boston's commercial hubs, but numbers of outside commuting trips there in 2022 still averaged 34 percent below 2019 levels.

FIGURE 20

Commuters to Boston's Commercial Hubs, Average Month in 2022 Relative to Same Month in 2019



Source: Cuebiq mobility data. Cuebiq collects first-party data from anonymized users who have opted-in to provide access to their location data anonymously, through a GDPR-compliant framework. To preserve privacy home and work locations are aggregated to the census-block-group level.

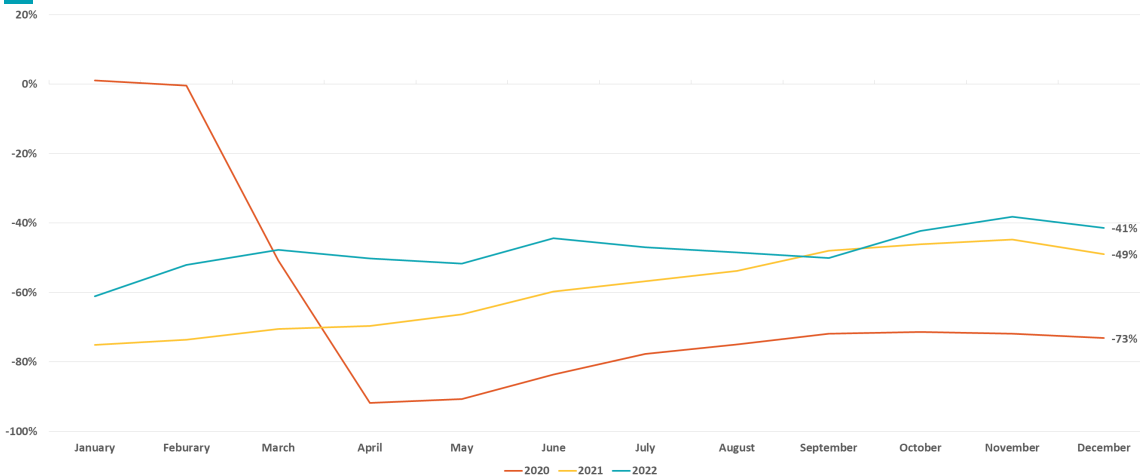
MBTA Ridership

MBTA ridership has slowly recovered since the onset of the pandemic in the spring of 2020, but remains well below pre-pandemic levels, and 2022 saw slower recovery and even some stagnation in ridership levels. This is consistent with overall levels of commuting into Boston being down, and

may additionally reflect the impacts of service cuts that were made starting in June 2022 as well as the Orange Line shutdown from 8/19/2022 to 9/19/2022. Boston ridership in December 2022 remained 41% below 2019 levels.

FIGURE 21

Validations at MBTA Gated Stations in Boston, 2020-2022, Relative to Same Month in 2019



Source: MBTA Datablog; Covid-19 and MBTA Ridership, BPDA Research Division Analysis.

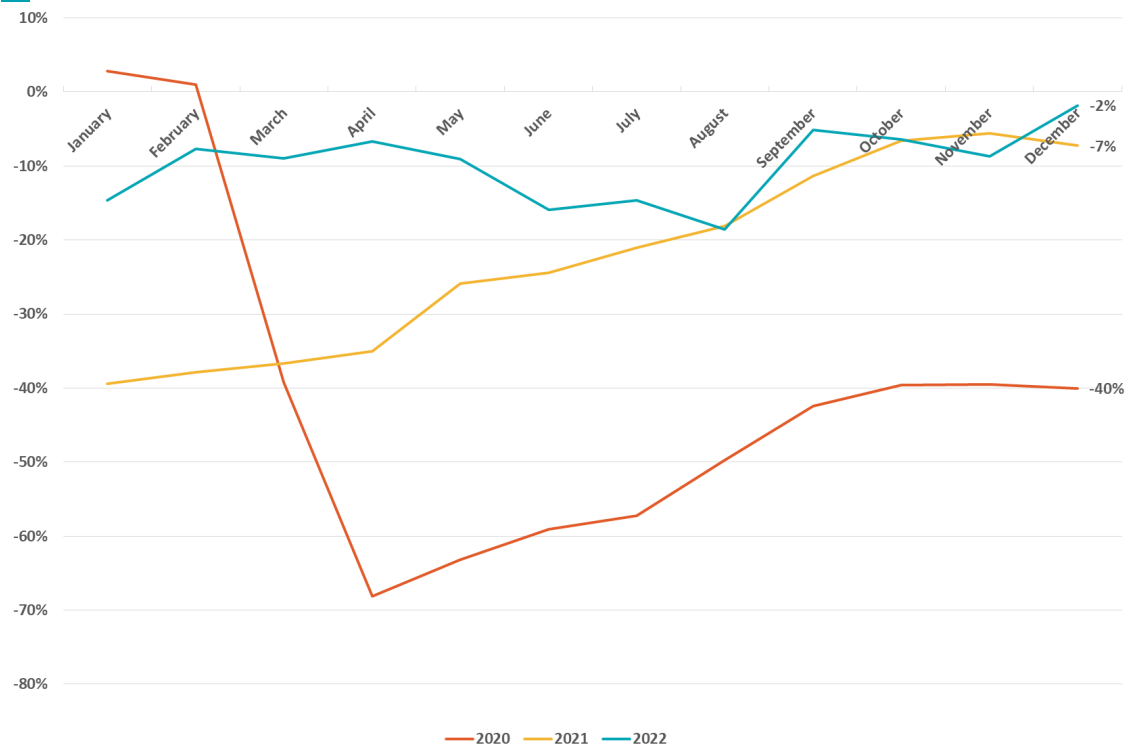
Visiting Patterns

After falling off sharply at the start of the pandemic, numbers of visitors to Boston steadily grew through 2020 and 2021, and in 2022 they remained consistently close to 2019 levels.

In December 2022, numbers of visitors to Boston reached 98.2% of December 2019 levels.

FIGURE 22

Visitor Trips to Boston, 2020-2022, Relative to Same Month in 2019



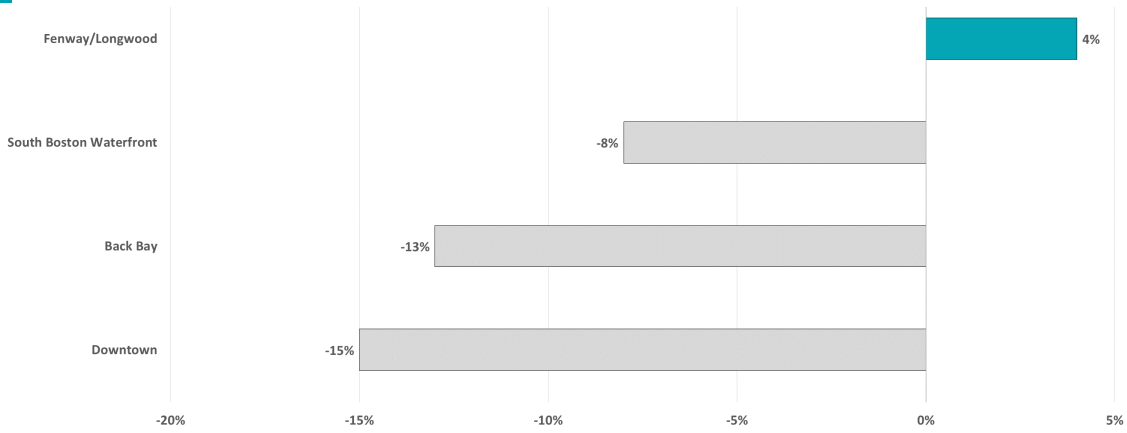
Source: Cuebiq mobility data. Cuebiq collects first-party data from anonymized users who have opted-in to provide access to their location data anonymously, through a GDPR-compliant framework. To preserve privacy home and work locations are aggregated to the census-block-group level.

Numbers of visitors to Boston's commercial hubs in 2022 all averaged above 80 percent of 2019 levels, but Fenway/Longwood showed the most recovery, with average visiting levels in 2022

surpassing 2019 levels by 4 percent. Downtown showed the least recovery among the commercial hubs, with visitors to Downtown in 2022 averaging 85 percent of 2019 levels.

FIGURE 23

Average Visitor Trips to Boston's Commercial Hubs in 2022, Relative to Same Month in 2019



Source: Cuebiq mobility data. Cuebiq collects first-party data from anonymized users who have opted-in to provide access to their location data anonymously, through a GDPR-compliant framework. To preserve privacy home and work locations are aggregated to the census-block-group level.

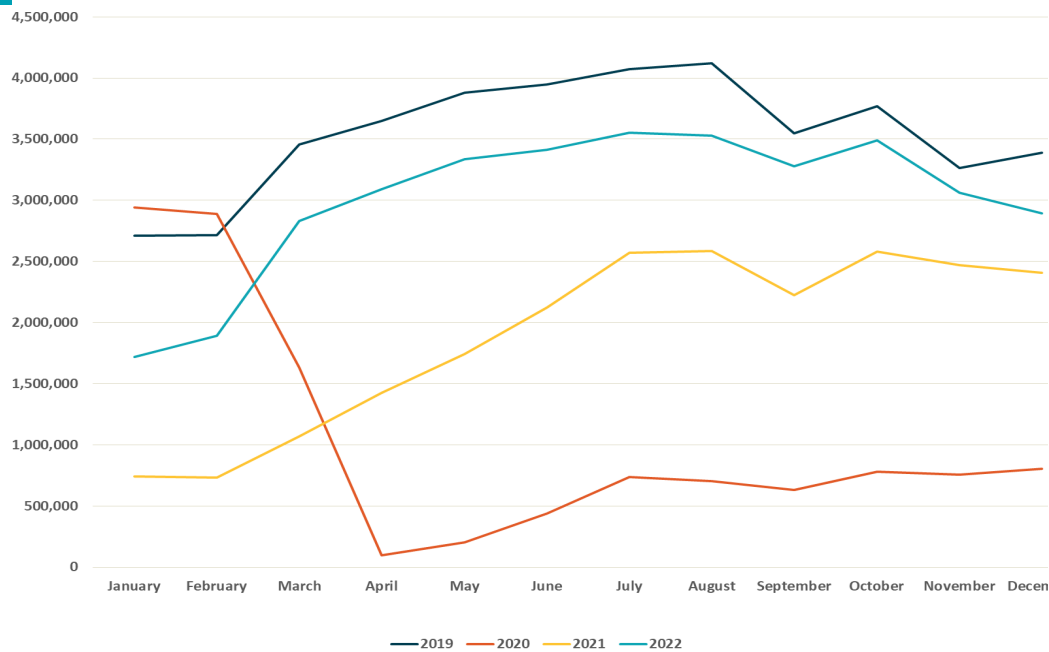
Air Travel

The onset of the pandemic caused passenger volume at Logan Airport in April 2020 to fall to 2.6 percent of April 2019 levels. Passenger volume gradually increased throughout 2021 and con-

tinued increasing through 2022, almost reaching pre-pandemic levels during the fall. In December 2022, Logan served about 85 percent as many passengers as it did in December 2019.

FIGURE 24

Monthly Passengers at Logan Airport, 2019-2022



Source: Massachusetts Port Authority, Aviation General Management (Massport)

Hospitality

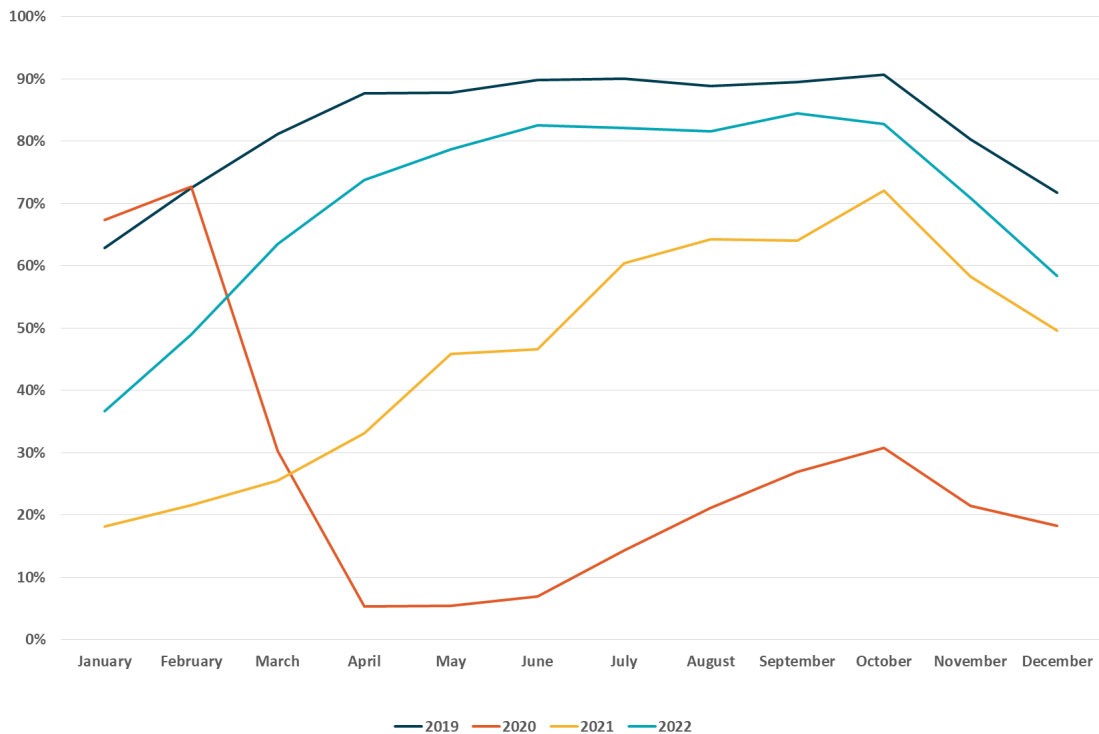
Hotel Occupancy

Hotel occupancy in Boston typically peaks in October. The average occupancy rate of hotels in Boston was 90.7 percent in October 2019, according to the Pinnacle Perspective Monthly Report. Boston hotels were closed to general public accommodation from late March to early June 2020 due to the COVID-19 pandemic, and in

October 2020, only 30.8 percent of rooms were filled. Since then, hotel occupancy rates have mostly recovered to 2019 levels, reaching 72.1 percent occupancy in October 2021 and 82.7 percent occupancy in October 2022.

FIGURE 25

Boston Hotel Occupancy Rate by Month, 2019-2022



Source: Pinnacle Perspective Boston Monthly Report

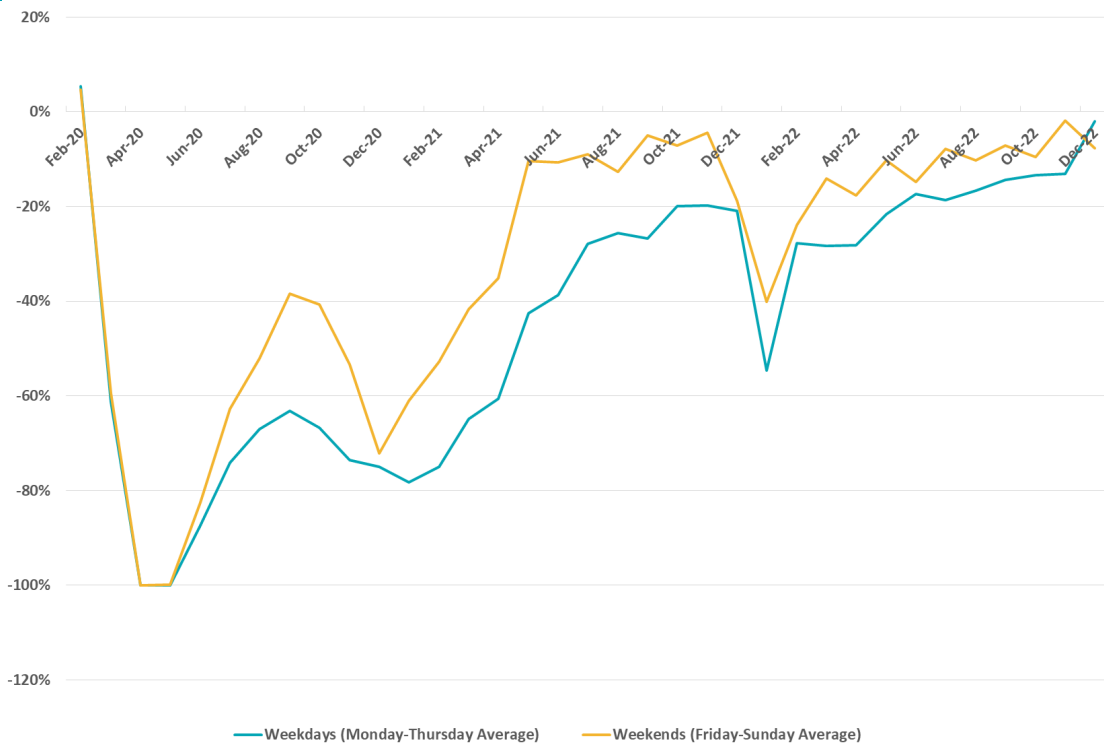
Seated Dining

Seated dining in Boston has almost fully recovered to pre-pandemic levels. After the initial lockdowns of 2020, numbers of seated diners gradually increased through 2021 and 2022. By December

2022, Boston reached close to 100% of its 2019 seated dining levels on both weekdays and weekends.

FIGURE 26

Seated Diners in Boston, 2020-2022, Relative to Same Month in 2019



Source: OpenTable, BPDA Research Division Analysis

In-person Consumer Spending

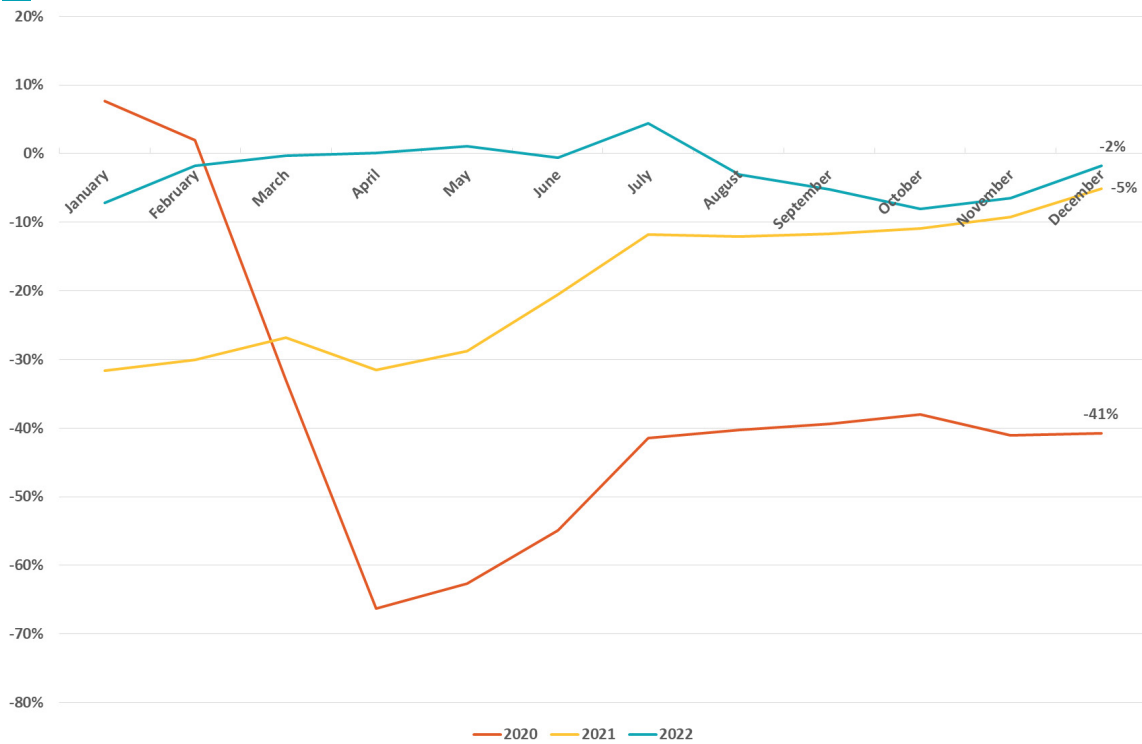
In-person Consumer Spending Citywide

In-person consumer spending fell at the onset of the COVID-19 pandemic to 66 percent below 2019 levels but increased steadily for the next two years. At the onset of 2021, spending levels were

32 percent below 2019 levels. In-person consumer spending peaked in July 2022 at 4 percent above but fell to 2 percent below 2019 levels by the end of the same year.

FIGURE 27

Percentage Change in Overall In-Person Consumer Spending in Boston Compared to Average Level in Same Month in 2019



Source: MasterCard Geographic Insights from Carto from January 2019 to December 2022, BPDA Research Division Analysis 2023.

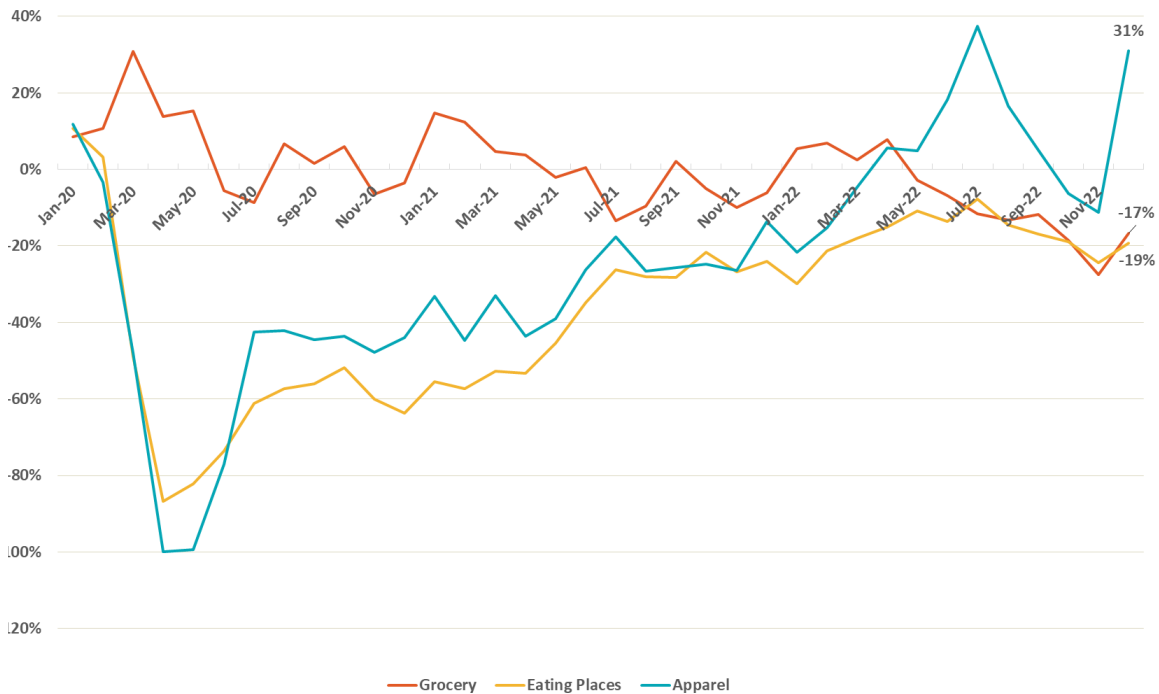
Note: Data have been adjusted to 2019 dollar amounts, so that the relative buying power for all data points remains stable and directly comparable.

In-person Consumer Spending by Sector

Restaurant and Apparel spending dropped dramatically at the beginning of the pandemic, with restaurant spending faring slightly better than apparel at 87 percent below 2019 levels compared to no spending in apparel as stores were mandated to close in the spring of 2020. There was a hike in apparel spending during the summer of 2022 as apparel remained one of the only sectors not seriously impacted by inflationary pressures. Restaurant spending has almost recovered at 19 percent below while apparel spending has surpassed 2019 spending levels by 31% at the end of 2023.

Grocery spending in-person remained stable throughout the pandemic and actually increased around March 2020 as more people stayed home to eat. At the end of 2022 grocery spending began to decrease from around April 2022 to the end of the year, ending at 17 percent below 2019 levels. Foodstuffs have been subject to high rates of inflation from around April 2022 onward and so as prices rose, consumers were less likely to spend as much at the grocery store.

FIGURE 2.8 Percentage Change in In-Person Consumer Spending by Sector in Boston Compared to Average Level in Same Month in 2019



Source: MasterCard Geographic Insights from Carto from January 2019 to December 2022, BPDA Research Division Analysis 2023.
 Note: Data have been adjusted to 2019 dollar amounts, so that the relative buying power for all data points remains stable and directly comparable.

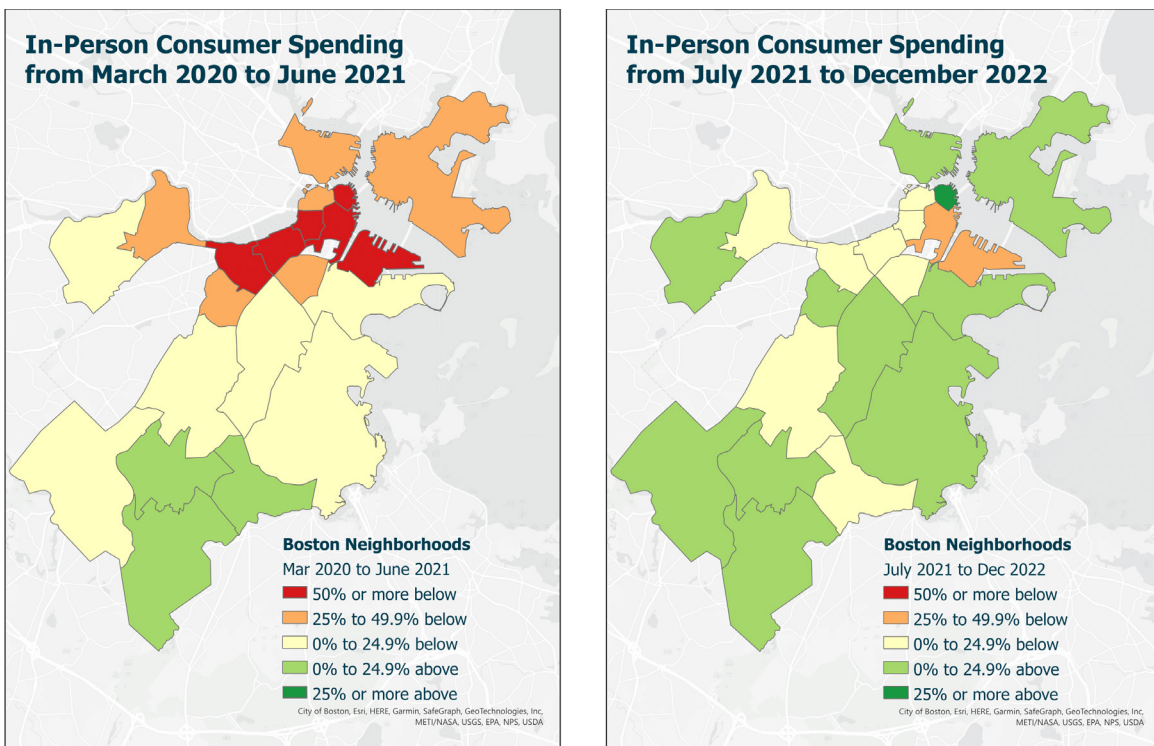
In-person Spending by Neighborhood

Pandemic impacts on consumer spending varied by neighborhood and the subsequent recovery has followed different paths in different neighborhoods. The map on the left in Figure 29 shows the impact of the pandemic on consumer spending in Boston neighborhoods prior to the widespread vaccine roll out. In-person commercial spending in Boston's more commercial neighborhoods (Fenway, Back Bay,

Beacon Hill, Downtown, Chinatown North End, South Boston Waterfront) was less than half of 2019 levels. On the other hand, Mattapan and Hyde Park actually saw an increase in in-person consumer spending as residents continued to frequent local businesses such as grocery stores and pharmacies and reduced their commuting or traveling to other regions.

FIGURE 29

Percentage Change in In-Person Consumer Spending by Boston Neighborhood Compared to Average Level in Same Month in 2019



Source: MasterCard Geographic Insights from Carto from January 2019 to December 2022, BPDA Research Division Analysis 2023.

Note: Data have been adjusted to 2019 dollar amounts, so that the relative buying power for all data points remains stable and directly comparable.

Neighborhoods approximated by 2010 Census tracts

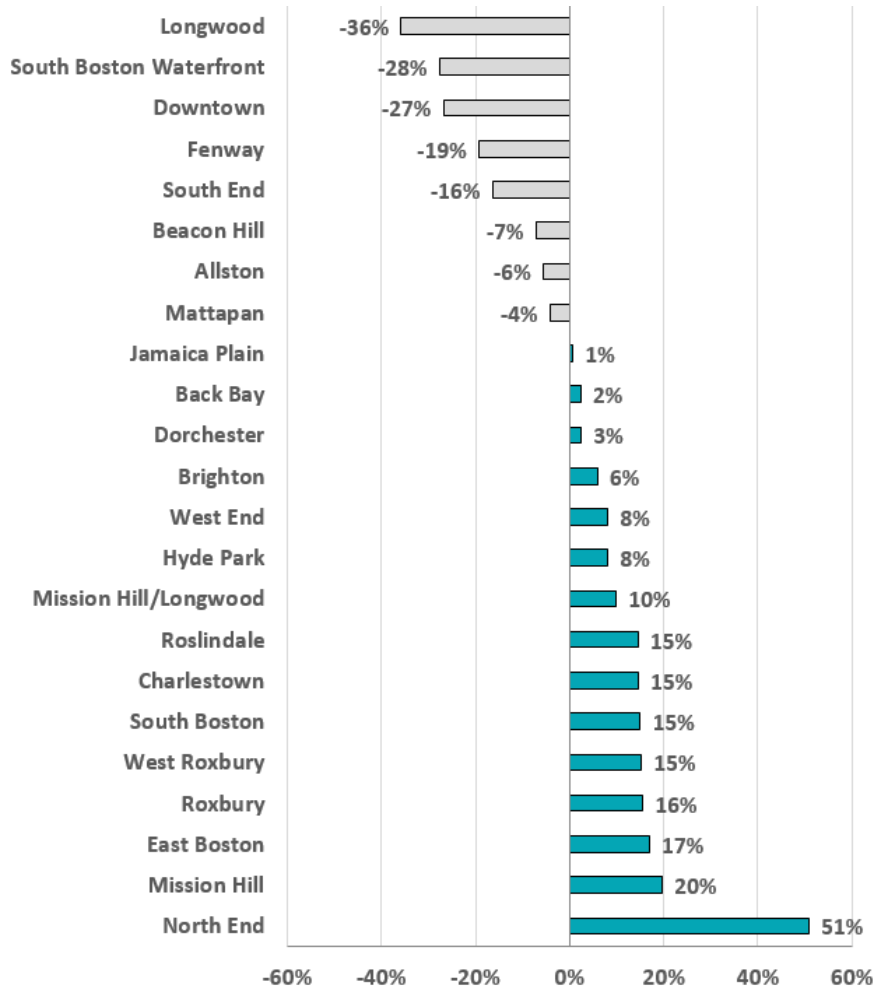
The map on the left in Figure 29 shows in-person consumer spending relative to 2019 during the post-vaccine rollout period from July 2021 through December 2022. Consumer spending in Downtown and the South Boston Waterfront remained more than 25 percent below 2019 levels. However, there are signs of substantial recovery in many neighborhoods. Primarily residential

neighborhoods such as West Roxbury, Brighton, Charlestown, and Dorchester achieved consumer spending levels above pre-pandemic levels. The North End rebounded from approximately 45 percent below 2019 in the early pandemic to almost 51 percent above 2019 after July 2021.

Figure 30 focuses on 2022 in comparison to 2019.

FIGURE 30

Percentage Change in In-Person Consumer Spending by Boston Neighborhood for 2022 Compared to Average Level in 2019



Source: MasterCard Geographic Insights from Carto from January 2019 to December 2022, BPDA Research Division Analysis 2023.

Note: Data have been adjusted to 2019 dollar amounts, so that the relative buying power for all data points remains stable and directly comparable.

Real Estate Market

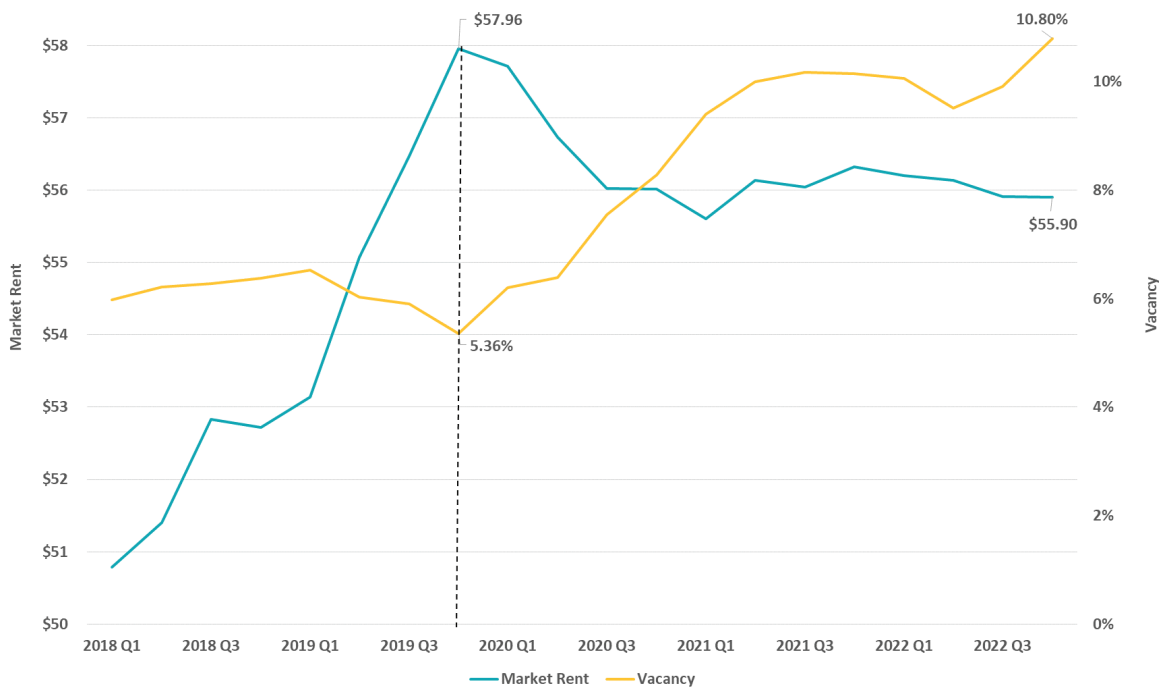
Office

Post-pandemic remote work trends continued to impact the Boston office market as commute trips to Boston in 2022 were 41 percent below 2019 levels and commute trips to Downtown

Boston were down 63 percent.⁴ Office rents remain at about \$56 per square foot while office vacancy rates rose to 10.8 percent at the end of 2022.

FIGURE 31

Boston Office Market Rent and Vacancy 2018-2022



Source: CoStar Real Estate Analytics

Office sublease availability is also high, reaching 4.7 percent of total inventory at the end of 2022,

approximately the same level as in the 2001 recession.⁵

Life Science

The Boston lab market had a quiet second half of 2022, but ended the year with 773,000 sq. ft. of positive absorption.⁶ Lab vacancy rates began the year below one percent but rose as supply increased and funding challenges dampened

demand. Vacancy rates for Boston labs rose from 0.9 percent to 1.9 percent, while availability of Boston lab space, comprised of all advertised space including space newly built but not yet occupied, increased from 23.6 percent to 24.6 percent.⁷

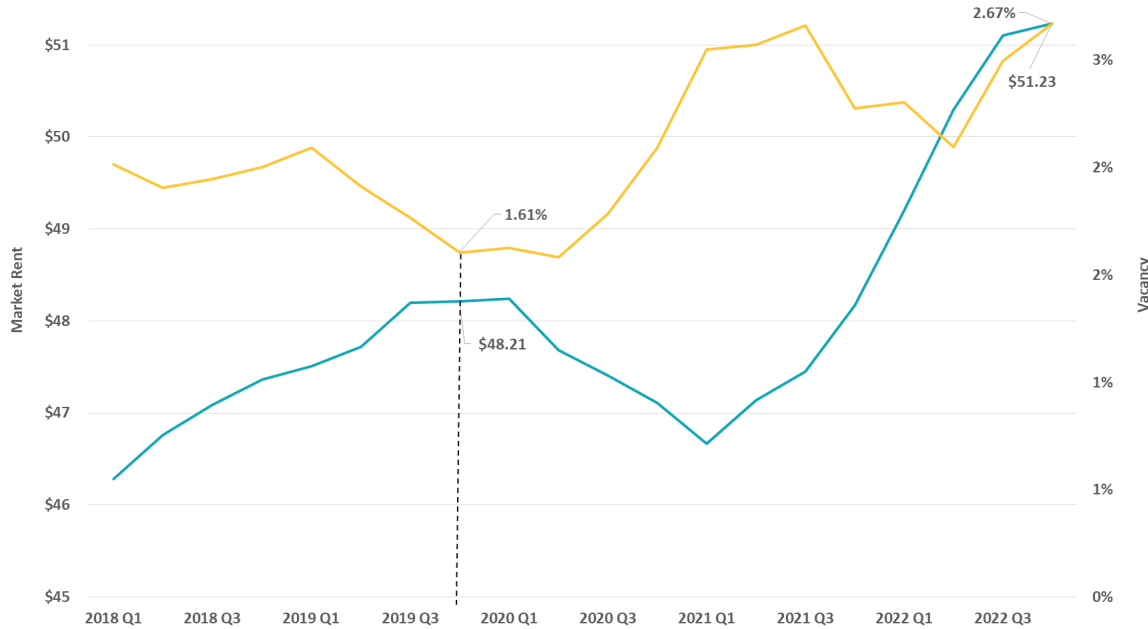
National Institutes of Health (NIH): Grants in Boston

Boston continues to be one of the top NIH funded cities in the nation, ranking second behind New York City in the 2022 fiscal year. Boston received 4,329 awards to its various independent hospitals, research institutes, and universities for a total of \$2.4 billion in funding. Five of the top ten funded hospitals in the U.S. are located in Boston—Massachusetts General Hospital, Brigham and Women’s Hospital, Boston Children’s Hospital, Dana-Farber Cancer Institute, and Beth Israel Deaconess Medical Center. MGH was the highest funded hospital in Boston, as well as the nation, with almost \$560 million in grants. MGH grants make up approximately 24 percent of Boston’s NIH funding.

Retail

Vacancy rates for retail space increased from 1.6 percent pre-pandemic to 2.7 percent at the end of 2022. Retail rents dipped in the early pandemic, but have been rising since the beginning of 2021, reaching \$51.23 per square foot by the end of 2022.

FIGURE 32 Boston Retail Market Rent and Vacancy 2018-2022



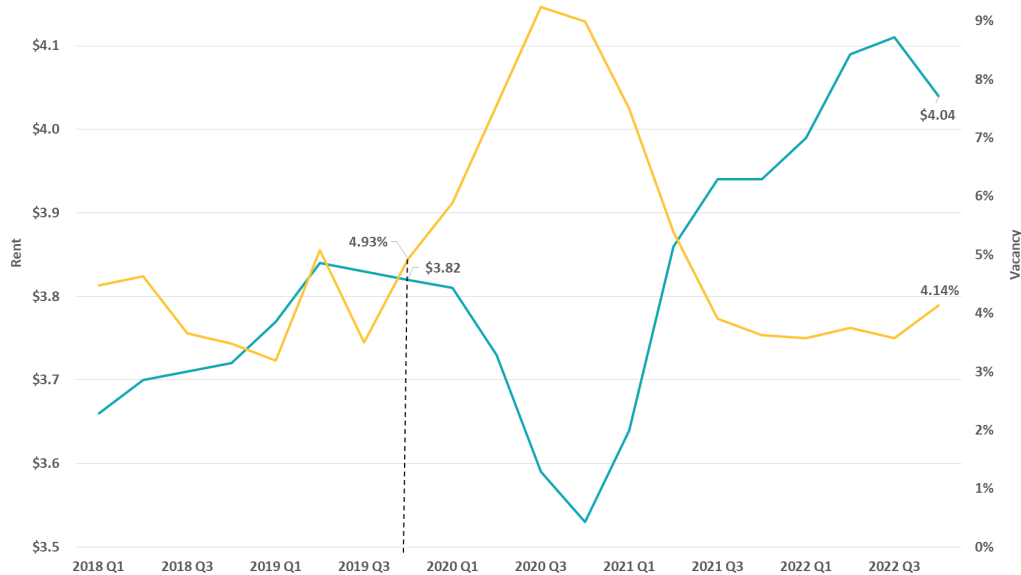
Source: CoStar Real Estate Analytics

At the onset of the Covid-19 pandemic multifamily vacancy rates rose sharply while rents fell dramatically, reflecting lower residential demand with college campuses closed and many offices operating remotely. However, vacancy rates and rents recovered by mid-2021 as colleges opened fully for the 2021-2022 school year and many offices

returned to at least hybrid operations. Q4 2022 vacancy was at 4.1 percent (lower than the 4.9 percent of Q4 2019) and asking rent was at \$4.04 per square foot, \$0.22 more than the pre-pandemic average. These data suggest that Boston's residential demand is strong and back to pre-pandemic levels.

FIGURE 33

Multifamily Residential Asking Rent (per S.F.) and Vacancy



Source: CoStar Real Estate Analytics, buildings with 5+ units

The citywide weighted average advertised rents rose 14.2% between 2021 and 2022 after seeing a more modest increase of 1.5% the year before. Rents rose in every neighborhood of the City, surging past 2020 rents even in neighborhoods that had seen a decline between 2020 and 2021. Weighted average monthly rents for an apartment in Boston's neighborhoods ranged from a low of \$2,253 in Hyde Park to a high of \$4,496 in the South Boston Waterfront. Data for 2022 real estate trends were provided by the Mayor's Of-

fice of Housing (MOH) based on listings provided to MOH by Rental Beast. Because the sample of rental listings in a given month or year does not necessarily represent the compositions of units in each neighborhood or the City as a whole, MOH uses a weighted average methodology to compare rents across time periods. By holding the compositions of units by bedroom and neighborhood constant based on their share in the ACS, this methodology isolates changes in rent levels from other changes in the sample.

TABLE 1

Average Monthly Rent of Newly Rented Apartments in Boston Neighborhoods (In Nominal Dollars)⁽¹⁾

Neighborhood	2020 Weighted Average Rent	2021 Weighted Average Rent	2022 Weighted Average Rent	Percent Change, 2021-2022
Allston	\$2,200	\$2,161	\$2,474	14.5%
Back Bay	\$3,322	\$3,250	\$3,737	15.0%
Bay Village	\$2,616	\$2,508	\$3,167	26.3%
Beacon Hill	\$2,761	\$2,567	\$3,116	21.4%
Brighton	\$2,172	\$2,183	\$2,487	13.9%
Charlestown	\$2,837	\$2,852	\$3,308	16.0%
Chinatown	\$2,815	\$2,784	\$3,247	16.6%
Dorchester	\$2,211	\$2,352	\$2,667	13.4%
Downtown	\$3,662	\$3,534	\$4,038	14.3%
East Boston	\$2,196	\$2,293	\$2,690	17.3%
Fenway	\$2,538	\$2,500	\$2,881	15.2%
Hyde Park	\$1,887	\$2,071	\$2,253	8.8%
Jamaica Plain	\$2,491	\$2,511	\$2,799	11.5%
Longwood Medical Area	\$2,424	\$2,478	\$2,508	1.2%
Mattapan	\$2,052	\$2,169	\$2,450	13.0%
Mission Hill	\$2,387	\$2,419	\$2,837	17.3%
North End	\$2,680	\$2,586	\$3,295	27.4%
Roslindale	\$2,033	\$2,152	\$2,418	12.4%
Roxbury	\$2,317	\$2,465	\$2,671	8.4%
South Boston	\$2,880	\$2,961	\$3,408	15.1%
South Boston Water-front	\$4,438	\$4,269	\$4,496	5.3%
South End	\$3,193	\$3,076	\$3,685	19.8%
West End	\$3,369	\$3,278	\$3,831	16.9%
West Roxbury	\$2,060	\$2,175	\$2,451	12.7%
Citywide	\$2,496	\$2,534	\$2,895	14.2%

(1) Averages weighted to match bedroom composition of units by neighborhood in ACS 2017-2021 5-Year Estimates. Data includes studios, 1-, 2-, and 3-bedroom listings

Source: City of Boston, Mayor's Office of Housing (MOH) using Rental Beast, January 2023

The residential sales market has been strong after a dip during the spring of 2020, though signs of cooling emerged in the third quarter of 2022 in response to increasing interest rates. The 2022 annual median sales price for a single-family home in Boston was \$761,000 according to the Mayor's Office of Housing using Banker & Tradesman home sales data, up 4% from 2021, but quarterly prices peaked at \$850,000 in the second quarter before

slipping to \$769,000 in the third quarter of 2022. Sales prices of two and three-family structures rose 3.6% between 2021 and 2022. The median condo sales price rose 3.7% from 2021, reaching \$725,000 in 2022. Single-family home prices have increased by 90 percent and condos by 65 percent compared to 2013, substantially outpacing growth in the overall price level which rose 26 percent over that time period.

TABLE 2
Median Residential Sales Prices for Boston
2013 through 2022 (In Nominal Dollars)

Year	Single-Family Median Sales Price	Percent Change	Two and Three-Family Median Sales Price	Percent Change	Condo Median Sales Price	Percent Change
2013	\$400,000	11.4%	\$415,000	16.9%	\$440,000	10.0%
2014	\$437,500	9.4%	\$480,000	15.7%	\$470,000	6.8%
2015	\$455,000	4.0%	\$540,000	12.5%	\$525,000	11.7%
2016	\$500,000	9.9%	\$580,000	7.4%	\$593,500	13.0%
2017	\$550,000	10.0%	\$675,000	16.4%	\$590,500	-0.5%
2018	\$590,000	7.3%	\$750,000	11.1%	\$659,000	11.6%
2019	\$610,000	3.4%	\$805,000	7.3%	\$660,000	0.2%
2020	\$675,000	10.7%	\$882,057	9.6%	\$677,000	2.6%
2021	\$732,000	8.4%	\$965,000	9.4%	\$699,000	3.2%
2022	\$761,000	4.0%	\$1,000,000	3.6%	\$725,000	3.7%

Source: City of Boston, Mayor's Office of Housing (MOH) using Banker & Tradesman data, January 2023

Real Estate Development

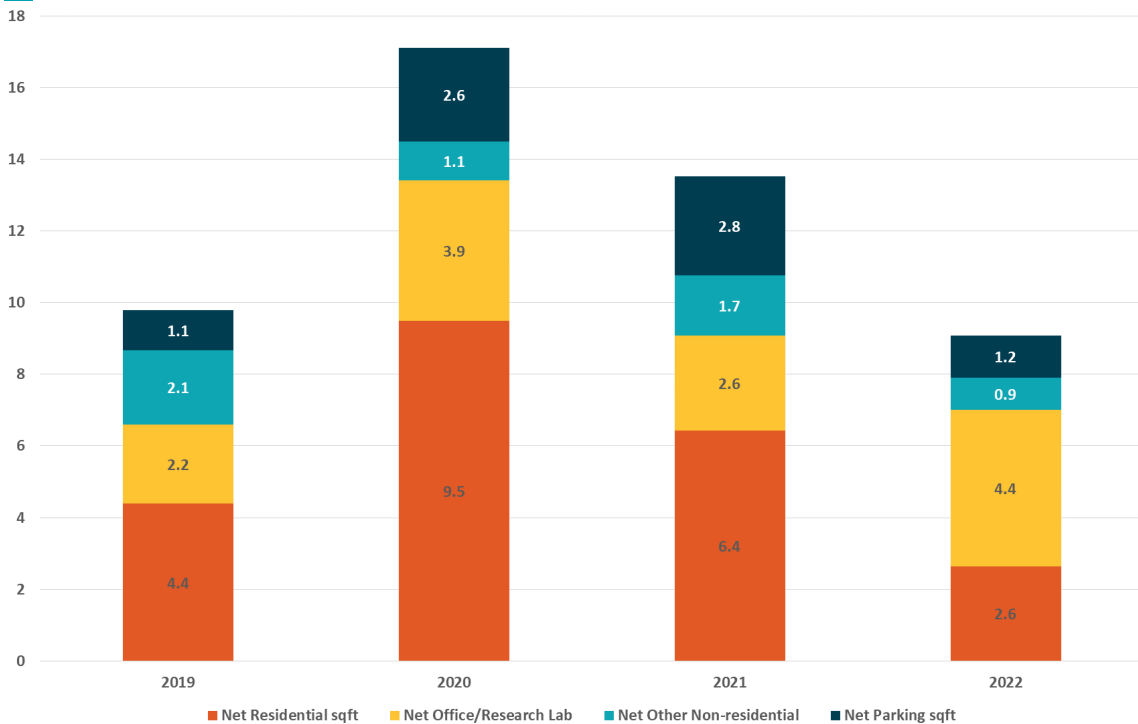
Article 80 Approvals

The BPDA oversees a development review process (Article 80) that requires BPDA Board approval of all development projects larger than 20,000 square feet, or residential projects with 15 or more units. The volume of projects approved by the BPDA Board is an indicator of future real estate growth. 2022 was an average year for

development approvals with almost 9.3 million square feet of development in newly approved projects and a small net reduction of square feet in previously approved projects (NPCs). Research laboratory approvals dominated in 2022 with a net 4.7 million square feet in new lab space approved.

FIGURE 34

Net Square Feet Approved by Year and by Use 2019-2022



Source: BPDA Development Review Development Database, BPDA Research Division analysis

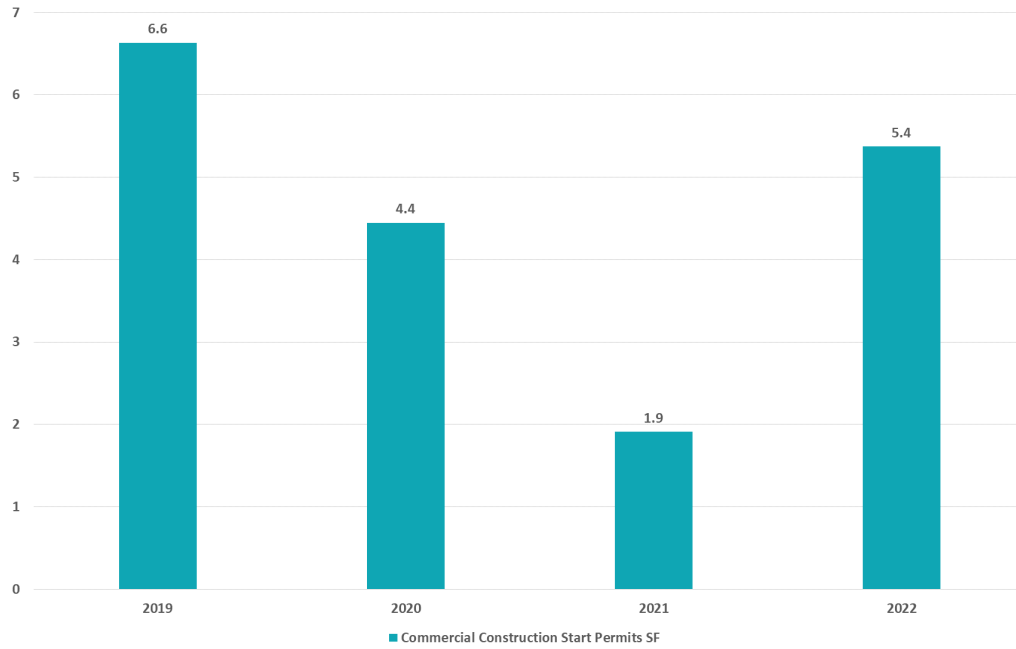
Note: 12.7 million square feet approved in 2020 was in a single project: Suffolk Downs

Non-residential construction start permits rebounded in 2022 after a slow year in 2021. A total

of 5.4 million square feet of commercial space was permitted in 2022.

FIGURE 35

Square Footage of Non-Residential Construction Start Permits Issued 2019-2022

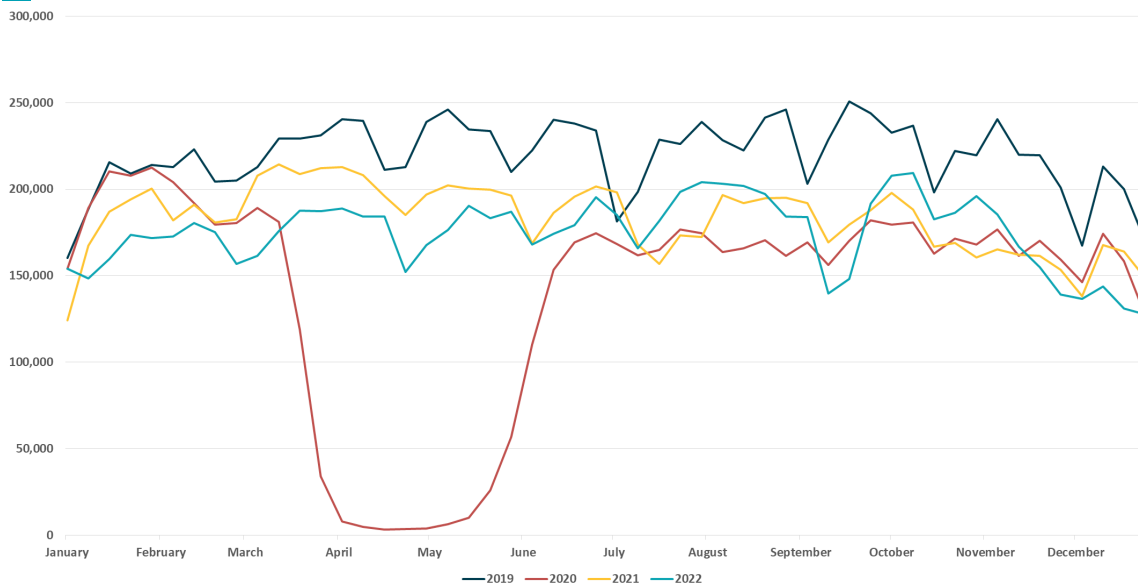


Source: City of Boston Mayor's Office of Housing

In 2022, construction hours worked in Boston development projects were 4.5 percent lower than 2021 and 20.4 percent below 2019 levels.

FIGURE 36

Construction Hours Worked, 2019-2022



Source: The Boston Residents Jobs Policy (BRJP) Office, Boston Jobs Policy Compliance Reports

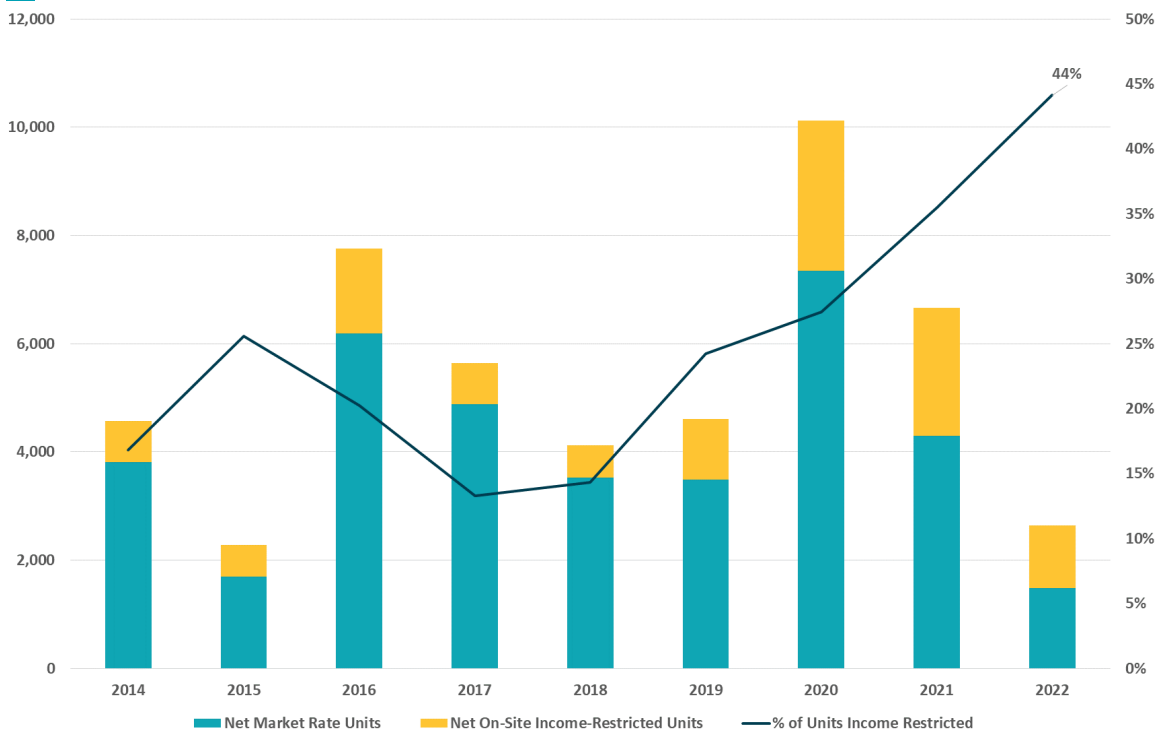
Residential Development

In 2022, the BPDA Board approved 3,216 new housing units in newly approved projects. Additionally, a Seaport Square development approved in 2017 for 1,200 units of housing in 2022 revised the project to reduce housing to 600 units and

increase commercial space. Including all changes to previously approved projects, 2,647 net units were approved in 2022. Of these units, 1,168 (44 percent) are on-site income-restricted units.

FIGURE 37

Net Residential Units Approved per Year (including new projects and project changes)



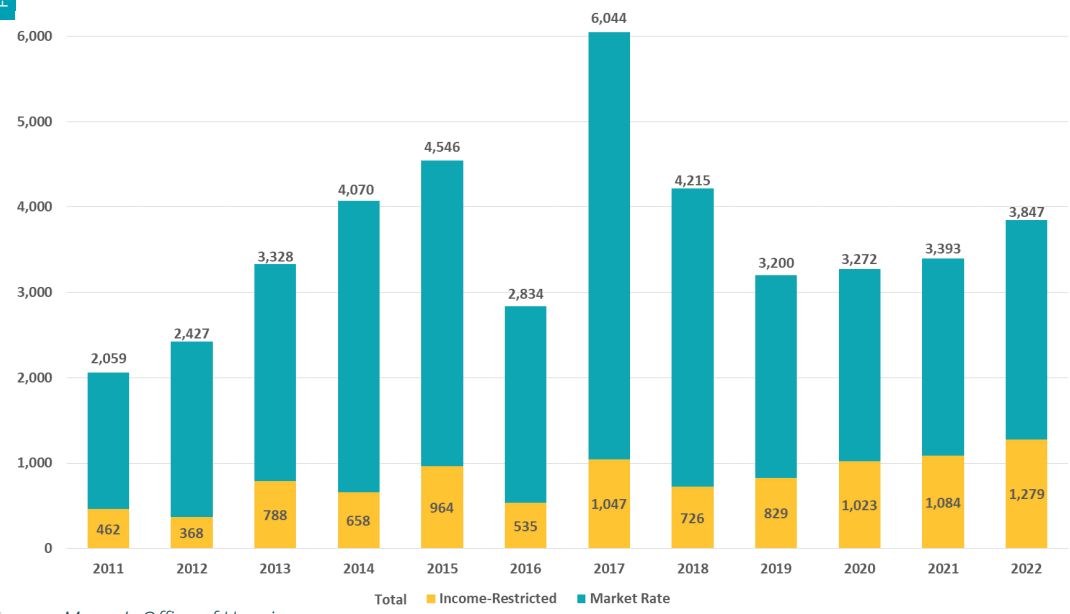
Source: BPDA Development Review Development Database and BPDA Research Division Analysis

As of January 2023, there were approximately 22,000 housing units that had received BPDA Board approval, but had not yet received a construction start permit. Projects under review by the BPDA included another 15,000 units.

2022 was a strong year for residential permitting, with 3,847 new housing units (including 1,279 income-restricted units) receiving construction permits — the highest level since 2018.⁸ As of January 2023, there are 8,327 units currently in construction in Boston.

FIGURE 38

Housing Units: Construction Permits by Year



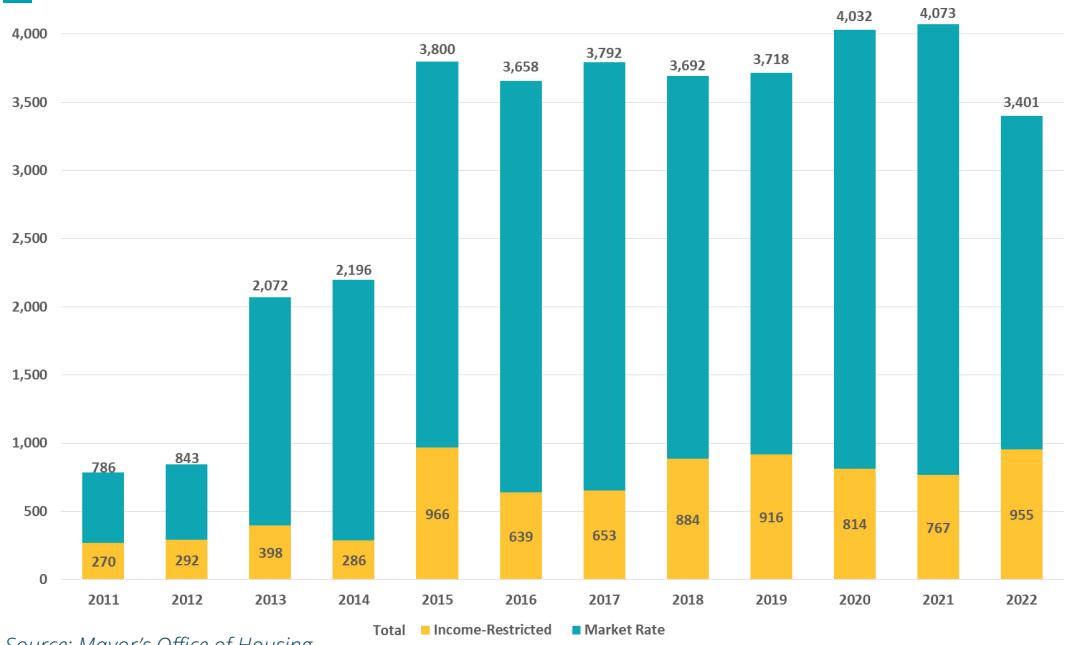
Source: Mayor's Office of Housing

Housing completions in 2021 set a record, with 4,073 units coming online, following a strong year for housing production in 2020 with 4,032 new

units completed.⁹ In 2022, 3,401 housing units were completed, 955 of which were income-restricted.

FIGURE 39

Housing Units: Completed by Year



Source: Mayor's Office of Housing

Conclusion

Boston's economic recovery continued in 2022, with employment increasing by just over 18,000 jobs, leaving the city roughly 5,000 jobs shy of the employment level from February 2020. Even as the Federal Reserve has raised interest rates substantially to combat high levels of inflation nationally, Boston's labor market remains tight, with unemployment at 3.0% in December 2022. As visitor trips to the city and consumer spending have risen near their pre-pandemic levels, employment in the city's Accommodation and Food Services sector has seen strong recovery, adding 9,404 jobs in 2022, though still down 7,627 since February 2020.

While further recovery in hospitality remains, hiring in Professional and Technical Services, Information, and Health Care and Social Assistance continued to push past pre-pandemic levels. Many of these jobs are connected to Boston's Life Science research cluster which continues to be a key driver both for labor demand and real estate investment. The BPDA approved 4.7 million square feet of new lab space in 2022, and construction permits were pulled for projects totaling 5.4 million square feet of non-residential construction. Though the Boston office market has softened, with vacancy increasing to 10.8 percent in the fourth quarter of 2022, lab space has remained a bright spot for commercial development in Boston.

Commuting trips to Boston at the end of 2022 remained 41 percent below 2019 levels, lending support to concerns that remote and hybrid work arrangements will continue to impact Boston's commercial hubs going forward. While consumer spending has rebounded citywide it remains down by more than a quarter in Downtown and the South Boston Waterfront.

The year ahead offers new challenges as the Federal Reserve's continued battle against inflation has introduced uncertainty in the tech and banking sectors and could lead to a broader national slowdown. Securing financing for real estate development is becoming more difficult in the high interest rate environment, and high interest rates and tight inventories threaten to further diminish housing affordability. As documented in this report, Boston's economy has navigated the unprecedented challenges of the past three years and emerged in a strong position. We expect the same moving forward into 2023 and beyond.

Appendix 1: Payroll Estimation Methodology

To estimate Boston monthly payroll employment in the second half of 2022, we take the monthly employment by industry in the second quarter of 2022 in Boston City from Quarterly Census of Employment and Wages (QCEW) and monthly employment by industry in the same period in Boston-Cambridge-Newton MA NECTA Division from Current Employment Statistics (CES). We calculate the ratios between the two monthly employment datasets for every industry. Then we average the ratios and apply them to the Boston NECTA employment (from CES) by industry in the second half of 2022 to get Boston City payroll employment by industry in the second half of 2022. The assumption is that the Boston City employment (from QCEW) share of Boston NECTA employment (from CES) stays the same between the second quarter and the second half of 2021. This assumption is based on the fact that the sampling frame and weighting for the CES is built upon QCEW. Also, Boston City employment makes up nearly one-third of Boston NECTA Division employment in QCEW. Monthly employment trends in the Boston-Cambridge-Newton MA NECTA Division in CES should give informative early estimates of the second half of 2022 Boston City payroll employment.

There are some limitations in these assumptions. There may be subtle differences between the universes of employment measured in QCEW and CES. Perhaps more importantly, Boston City and Boston-Cambridge-Newton MA NECTA Division are two geographic levels with different industrial structures. For example, as an urban center, Boston City concentrates more service jobs in the leisure and hospitality industries. As long as these differences remain consistent over time the methodology can account for this. However, if one area was hit particularly hard at a given time, as might have been the case for restaurants and retail in Downtown Boston compared to suburban locations during the early pandemic, this methodology would miss that shift. Further, employment in some industries has a stronger seasonal pattern, such as Arts, Entertainment, and Recreation. For strongly seasonal industries we use QCEW to CES ratios from the same month in the prior year rather than ratios from the second quarter of 2022 to estimate employment for 2022.

Endnotes

- 1 <https://www.bls.gov/opub/hom/cpi/pdf/cpi.pdf>
- 2 <https://www.nei.org/resources/statistics/state-electricity-generation-fuel-shares>
- 3 All rates reported here are seasonally unadjusted to be comparable across geographies, as no seasonally adjusted data is available for Boston. These numbers also reflect the most recent revisions made by the BLS and Massachusetts EOLWD and will not match what has been reported in earlier reports on Boston's economy.
- 4 Cuebiq
- 5 CBRE, Boston Office Figures Q4 2022
- 6 CBRE BOSTON METRO LAB | Q4 2022
- 7 CBRE BOSTON METRO LAB | Q4 2022
- 8 Mayor's Office of Housing
- 9 Mayor's Office of Housing

