NEW
YORK
STATE

EXECUTIVE BUDGET

ECONOMIC & REVENUE OUTLOOK

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FY 2023

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INTRODUCTION

Introduction

The Economic and Revenue Outlook is a volume designed to enhance the presentation and transparency of the FY 2023 Executive Budget. The volume provides detailed information on the economic and receipt projections underlying the Executive Budget. The economic analysis and forecasts presented in this volume are also used in the development of the expenditure projections where spending trends are impacted by economic conditions.

Executive Budget Financial Plan receipts include a variety of taxes, fees and assessments, charges for State-provided services, Federal grants, and other miscellaneous receipts. The Economic and Revenue Outlook includes receipts information required by Article VII of the State Constitution and Section 22 of the State Finance Law and provides information to supplement extensive reporting enhancements undertaken in recent years. The Division of the Budget (DOB or The Division) believes the information will aid the Legislature and the public in fully understanding and evaluating the economic assumptions and receipts estimates underlying the FY 2023 Executive Budget. The receipts estimates are prepared by DOB with the assistance of the Department of Taxation and Finance (DTF) and other agencies which collect State receipts and are predicated on economic analysis and forecasts. To the extent they are material, sources of receipts not referenced in this volume are discussed in the presentations of the agencies primarily responsible for executing the programs financed by such receipts.

The Economic and Revenue Outlook is presented in two parts:

- **Economic Backdrop:** Provides a detailed description of DOB's forecast of key economic indicators for the national and New York State (NYS) economies.
- **Receipts Explanation:** Provides a detailed summary for each tax source describing historical receipts and projections for the current and upcoming budget years, the administration, liability and history of the tax, including significant law changes in the past decade.

ECONOMIC BACKDROP

Executive Summary

- Real U.S. GDP surpassed its pre-recession peak during the second quarter of 2021, as Federal COVID-19 emergency spending provided an unprecedented level of economic stimulus. The national economy is estimated to have posted strong growth of 5.6 percent for the 2021 calendar year, after contracting 3.4 percent in 2020.

- The impact of Federal COVID-19 spending initiatives such as Economic Impact Payments, the Payroll Protection Program, and Enhanced Unemployment Insurance benefits has diminished over the course of 2021. This, combined with fallout from the pandemic including rising prices and supply shortages of labor and other inputs, is expected to restrain economic growth for 2022 to solid growth of 4.3 percent.

- A substantial share of employees shifted to remote work during the pandemic, altering household spending patterns within their respective commuting zones, and employment levels remain below their pre-pandemic peaks in almost every industry, with leisure and hospitality jobs still down by more than 1.2 million, or 7.2 percent.

- Some workers — especially those in high-contact service industries not conducive to remote work — continued to stay home to protect and care for themselves and their dependents. Other workers chose to retire early, enabled by their strong 401k gains over recent years. These factors contributed to the ongoing labor shortage in 2021. The level of nonfarm employment is not expected to surpass its first quarter of 2020 level until the fourth quarter of 2022. Employment growth of 3.5 percent is projected for 2022, following growth of 2.7 percent in 2021.

- An accelerated wave of both retirements and self-employment has resulted in labor shortages that have led to heightened rates of wage growth. On an economywide basis, average wage growth barely kept up with inflation in 2021, but in the case of some of the economy's lowest paid employees, such as those within the leisure and hospitality sector, wage increases in 2021 well exceeded the rate of inflation.

- The pandemic triggered a shift in consumer preferences from services toward goods, compounding labor shortages within such occupations as truck drivers and dock workers, which were already suffering from the Coronavirus and restrictive quarantines. These shortages contributed to clogged West Coast ports, further exacerbating upward wage and price pressures. With labor shortages expected to continue well into 2022, wage growth is expected to remain elevated at 7.4 percent for 2022, only slightly below 2021's growth of 9.1 percent.

- Labor shortages, supply-chain disruptions, rebounding energy prices, strong housing market demand, and excess consumer demand supported by Federal fiscal stimulus contributed to consumer price growth of 4.6 percent for 2021, the highest annual rate of inflation since 1991. Headline inflation is expected to experience another strong year with

annual average growth of 4.1 percent in 2022. Inflation is projected to fall to 2.3 percent for 2023, well within the Federal Reserve's comfort zone.

- Consistent with the Federal Open Market Committee's December 2021 announcement and policymakers' projections, the Division anticipates that the Federal Reserve will end its asset purchases by March 2022 and raise its federal funds target rate three times before the end of the year, bringing its target rate above 1.5 percent by the end of 2023. These actions are expected to be sufficient to restore faith that inflation will cool once pandemic-induced shortages are resolved.

- Though the New York State labor market has made significant progress since the depth of the COVID-19 pandemic, it had only recovered 60.4 percent of the jobs lost in March and April 2020 as of November 2021. New York City had recovered only 53.6 percent of its pandemic-related jobs losses, slowing the State's recovery. This compares to a much stronger recovery of 83.1 percent for the nation.

- At 6.6 percent as of November 2021, New York had the fourth-highest unemployment rate in the nation, behind California, Nevada, and New Jersey.

- The outlook for the State labor market remains favorable for 2022, despite a new wave of infections of the Omicron variant. Total New York State employment is projected to grow 5.6 percent in 2022, with private sector jobs growing 6.3 percent. State employment is projected to surpass its pre-pandemic level in 2024, representing a significant lag compared to the nation.

- State wage growth fell 2.0 percent in FY 2021 due to downward pressure from the beleaguered labor market. However, a much stronger performance is expected for the State fiscal year in progress due primarily to strong bonuses and a rebound from the employment losses of the prior year. State wage growth is estimated to increase 11.4 percent for FY 2022.

- Supported by aggressive fiscal and monetary stimuli, the financial services industry experienced a very profitable 2021. Solid bank profits for 2021 are estimated to have driven strong financial sector bonus growth of 16.2 percent for FY 2022, following 20.2 percent growth for FY 2021. But with the impact of the pandemic-related fiscal stimulus diminishing and the Federal Reserve starting to tighten, finance and insurance sector bonuses are projected to decline 9.9 percent for FY 2023.

- Despite the devastating impact of the pandemic on employment and wages, New York State personal income increased by 8.5 percent in FY 2021, due to a substantial boost to non-wage income from Federal stimulus spending. State personal income is estimated to increase by a more muted 1.0 percent for FY 2022 and 1.1 percent for FY 2023, as the effects of the stimulus payments wane and rising interest rates put downward pressure on financial market activity.

The U.S. Economy

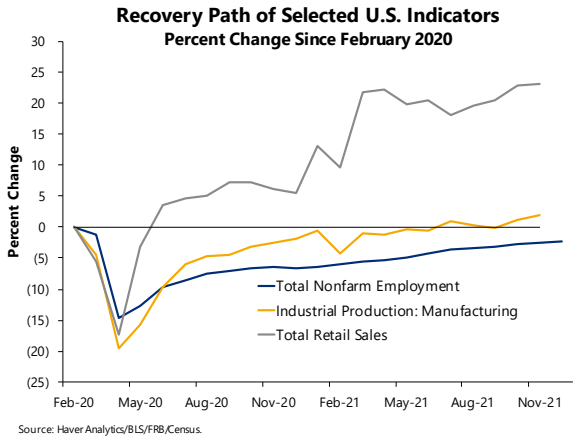
By December 2020, even as the nation was well into its first winter holiday spike, the signs of a nascent recovery were evident, marked by a historic 33.8 percent rise in U.S. real GDP and a decline in the unemployment rate from its April 2020 peak of 14.8 percent to 6.7 percent, a stunning 8.1 percentage point decline over just eight months. Indeed, real U.S. GDP surpassed its pre-recession peak by the second quarter of 2021 and is estimated to have posted strong growth of 5.6 percent in 2021, following a decline of 3.4 percent in 2020.

The volatility that characterized growth in 2021 related to Federal COVID-19 spending, is expected to diminish as the impact of such initiatives as Economic Impact Payments, the Payroll Protection Program, and Enhanced Unemployment Insurance benefits peters out over time. Fallout from the pandemic, including but not limited to labor and supply shortages, is expected to restrain economic growth for the current year, but the Division expects solid annualized quarterly growth exceeding three percent for every quarter of 2022, resulting in growth of 4.3 percent for the year overall.

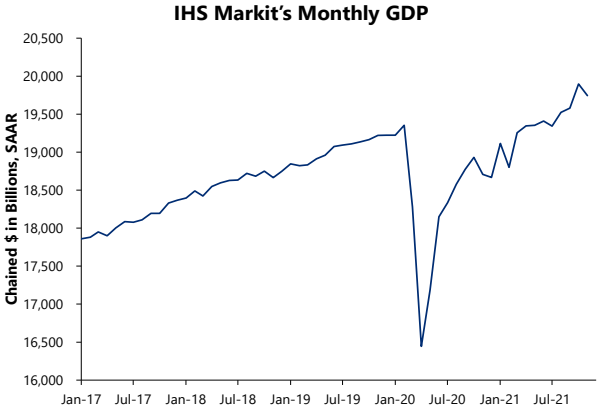
Though the nation's recovery is proceeding at a healthy pace, recent experience has shown this recovery is unlike any other. A substantial share of employees shifted to remote work, altering household spending patterns within their respective commuting zones. Notably, the recovery in national output was achieved with a labor force that, as of December 2021, remained 2.3 million, or 1.4 percent, below its February 2020 level. Employment levels remain below their pre-pandemic peaks in almost every industry, with leisure and hospitality jobs still down by more than 1.2 million, or 7.2 percent.

The U.S. economy seemingly doing more with less highlights the dramatic evolution that has taken place within the national labor market well beyond the shift to remote work. Some of that change is deemed to be temporary as health risks mounted with the spread of the Delta variant beginning last summer, and workers in industries not conducive to remote work stayed home. An accelerated wave of both retirements and workers taking a shot at self-employment have resulted in economywide labor shortages that have led to heightened rates of wage growth. Based on projected employment growth of 3.5 percent in 2022, following growth of 2.7 percent in 2021, the level of nonfarm employment is expected to finally surpass its first quarter of 2020 level by the fourth quarter of 2022.

Average wage growth barely kept up with inflation in 2021 on an economywide basis, but in the case of some of the economy's lowest paid employees, such as those within the leisure and hospitality sector, wage increases in 2021 well exceeded the rate of inflation. As consumers shifted their preferences from dining out and other high-contact services to goods purchases that took place in large part online, shortages within such occupations as truck drivers and dock workers have emerged, exacerbating wage and price pressures and clogging West Coast ports. With labor shortages expected to continue well into 2022, wage growth is expected to remain elevated at 7.4 percent for 2022, only slightly below 2021's growth of 9.1 percent.



Source: Haver Analytics/BLS/FRB/Census.



Source: Haver Analytics/IHS Markit.

Driven by a combination of labor shortages, supply-chain disruptions, rebounding energy prices, strong housing market demand, and excess consumer demand supported by Federal fiscal stimulus, consumer price growth of 4.6 percent is estimated for 2021, the highest annual rate of inflation since 1991. Headline inflation is expected to experience another strong year, with consumer prices rising 4.1 percent on an annual average basis in 2022. Inflation is projected to fall to 2.3 percent and 2.1 percent for 2023 and 2024, respectively, well within the Federal Reserve's comfort zone.

Consistent with the Federal Open Market Committee's (FOMC) December 2021 announcement and policymakers' projections, the Division anticipates that the Federal Reserve will end its asset purchases by March 2022 and raise the federal funds target rate three times before the end of the year, bringing its target rate above 1.5 percent by the end of 2023. These actions are expected to be sufficient to restore faith that inflation will cool once pandemic-induced shortages are resolved. On the other hand, with the spread of the Omicron variant, and the potential for a significant adverse impact on household demand, a premature monetary tightening could do more harm than good at least in the short run. Balancing these risks could represent the Federal Reserve's most difficult monetary policy challenge since the Financial Crisis.

Labor Markets

Key Points

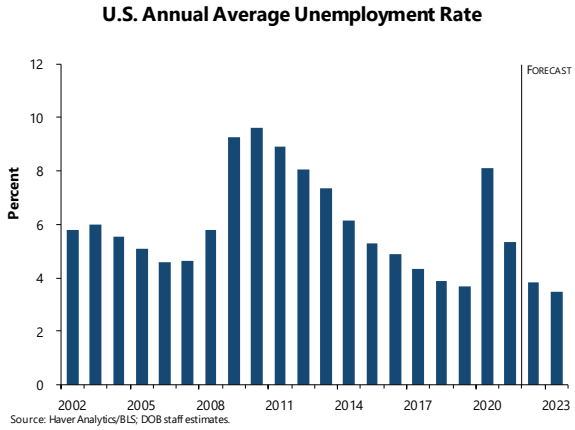
- Total nonfarm employment is slowly approaching its pre-pandemic peak. As of December 2021, the payroll count was approximately 3.6 million (2.3 percent) below its February 2020 level. However, the pace of recovery was uneven in 2021, with the Delta wave of the virus weighing down the rate of job gains that occurred during June and July.

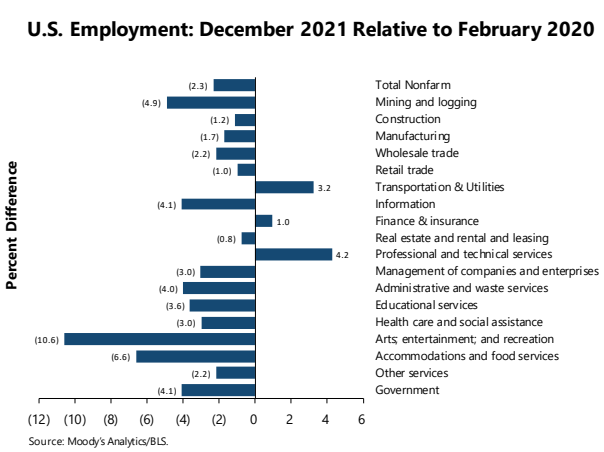
- Leisure and hospitality, professional and business services, retail trade, and transportation and warehousing sectors posted significant job gains in 2021. Despite these gains, the employment levels for most sectors, except transportation and utilities, finance and insurance, and professional and technical services, still fell well short of their pre-pandemic levels.

- Labor shortages have slowed the labor market recovery in 2021. Some workers, especially those in high-risk service industries stayed home, while others chose to retire early. The labor participation rate among young workers has mostly recovered to its pre-pandemic level; however, it remains low among those 25 and older.

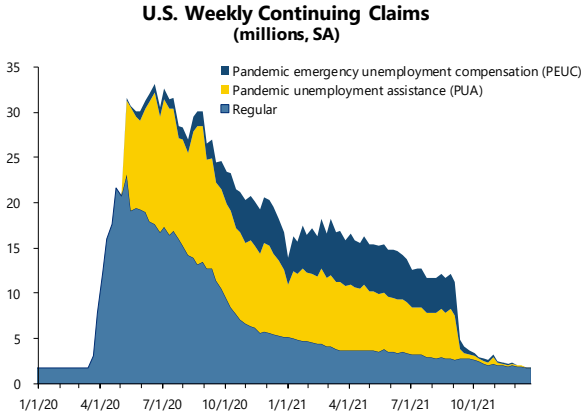
- Employment growth registered a 2.7 percent increase in 2021. Since the trough in April 2020, payrolls have increased by 18.8 million as of December 2021 and are anticipated to recover all losses by late 2022. Total nonfarm employment growth of 3.5 percent is projected for 2022, followed by 1.9 percent growth for 2023.

- Since December 2020, the unemployment rate has edged down by 2.8 percentage points to 3.9 percent in December 2021. DOB projects a national unemployment rate of 3.8 percent on average in 2022 and 3.5 percent in 2023, following 5.4 percent on an annual average basis for 2021.





Source: Moody's Analytics/BLS.



Source: Moody's Analytics/U.S. Employment & Training Administration (ETA).

Recent Developments

The COVID-19 pandemic continues to be an obstacle to restoring a balanced labor market recovery. Declining infections and loosening restrictions in the first quarter of 2021 raised prospects for strong employment gains. However, the slow pace of growth in labor force participation and employment did not meet these expectations.

As of December 2021, nonfarm payroll employment has increased by 6.4 million from a year ago, but it was still 3.6 million, or 2.3 percent, below its pre-pandemic level in February 2020. Notable job gains occurred in leisure and hospitality, professional and business services, retail trade, and transportation and warehousing sectors. However, employment levels for all sectors, except transportation and utilities, finance and insurance, and professional and technical services, still fell short of their pre-pandemic levels, with the high-contact service sectors lagging the most. In particular, employment in the leisure and hospitality industry was still 1.2 million below its pre-pandemic level as of December 2021.

The headline unemployment rate (also known as the "U-3") declined to 3.9 percent in December 2021, significantly lower than its peak of 14.7 percent in April 2020 but still above its pre-pandemic level of 3.5 percent. The number of workers defined as long-term unemployed (unemployed for 27 weeks or more in duration) peaked at 4.2 million in March 2021 and fell gradually afterward. By December, 2.0 million, or 31.7 percent of all unemployed workers qualified as long-term unemployed, double its pre-pandemic level.

The underemployment rate (also known as the "U-6"), which includes the underutilized (those working part-time but willing to work more hours) and discouraged workers who have dropped out of the labor force but still desire a job, declined to 7.3 percent in December 2021, 0.3 percentage points above its level in February 2020. Interestingly, the number of employees considered as "underutilized" dropped to 3.9 million in December 2021, slightly below its pre-pandemic level, an indication of just how tight the national labor market currently is.

Unemployment Insurance Claims

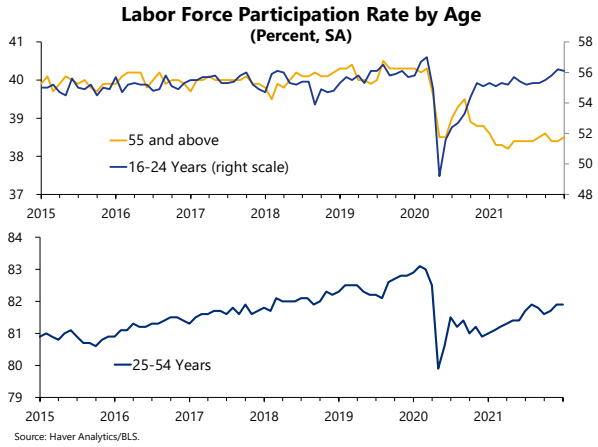
The American Rescue Plan, passed and signed into law in March 2021, extended Federal emergency and unemployment insurance (UI) programs that were initiated under the CARES Act in response to the COVID-19 pandemic to 2021. The Pandemic Emergency Unemployment Assistance (PEUC) program provided additional weeks of unemployment benefits to people who exhausted their regular state benefits. The Pandemic Unemployment Assistance (PUA) program extended unemployment benefits to self-employed people or other unemployed people who are usually ineligible for regular state UI benefits. The Federal Pandemic Unemployment Compensation (FPUC) program boosted unemployment benefits by $300 per week. All these pandemic-era UI programs were set to expire on Labor Day, but quite a few states started to retire these UI benefits earlier, in June or July of 2021.

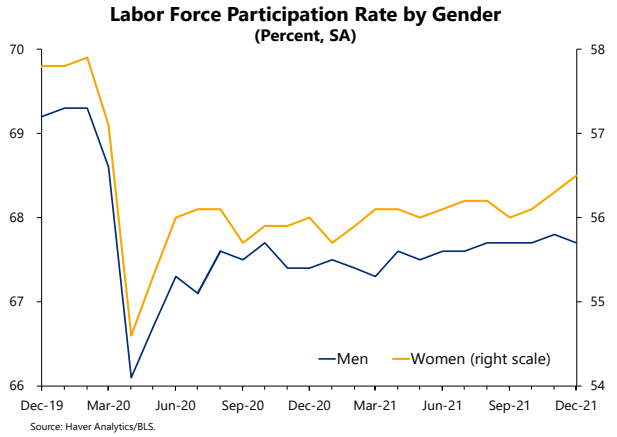
Initial unemployment insurance claims (seasonally adjusted) fell notably over the course of 2021, declining from a high of 904,000 claims in the second week of January 2021 to lows in November and December unseen since 1969. Continuing claims in the regular state program declined to 1.6 million in the third week of December 2021, while the insured unemployment rate edged down to 1.2 percent. Continuing claims for PUA posted an average of 7.1 million between January and May of 2021 but fell to 5.4 million on average between June and August with the early expiration of the program by some states, and ultimately plunged to an average of 157,909 in November and December after the program expired nationwide in September. Similarly, continuing claims for PEUC averaged 4.9 million in the first five months of 2021, declined to 4.3 million on average in the next three months and dropped rapidly after the first week of September to 130,217 on average in November and December.

Great Resignation and Labor Shortages

As schools returned to in-person learning, the employment level started to pick up in the fall of 2021. For the prime working-age population, defined as adults from ages 25 to 54, the employment to population ratio followed an increasing trend, reaching 79.0 percent in December 2021, while the unemployment rate declined to 3.9 percent, 2.8 percentage points lower than the same month of the prior year.

Despite these improvements in the labor market, the anticipated wholesale return of the labor force did not happen, with an average monthly increase of 274,333 from October till December 2021 still leaving the labor force 2.3 million below its pre-pandemic level. After gradually picking up from the pandemic trough of 60.2 percent in April of 2020, the labor force participation rate increased to 61.9 percent in December of 2021 as prime-age workers and those under age 25 returned to the labor market. Since its initial decline at the beginning of the pandemic, the prime-age labor force participation rate has increased to 81.9 percent in December 2021, 1.1 percentage points below its February 2020 level. Meanwhile, the participation rate for people aged between 16 and 24 years old has almost caught up with its pre-pandemic level.





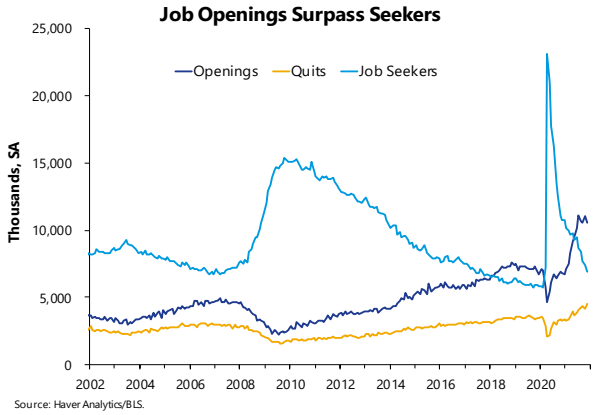
However, older people and women were more prone to leave the labor force during the pandemic. Compared to men, the labor force participation rate for women increased at a slower pace during 2021. As of December, the labor force was 1.5 percent below its February 2020 level for women and 1.3 percent below its February 2020 level for men. Since the closing of the unemployment rate gap between men and women in December 2020, the female unemployment rate dropped more precipitously over the course of 2021 with the female labor force growing more slowly than that for men. The pandemic also prompted many older workers to retire earlier and leave the labor force. In 2021, the labor force for those aged 55 and over noticeably declined; as of December 2021, it was 2.3 percent below its February 2020 level.

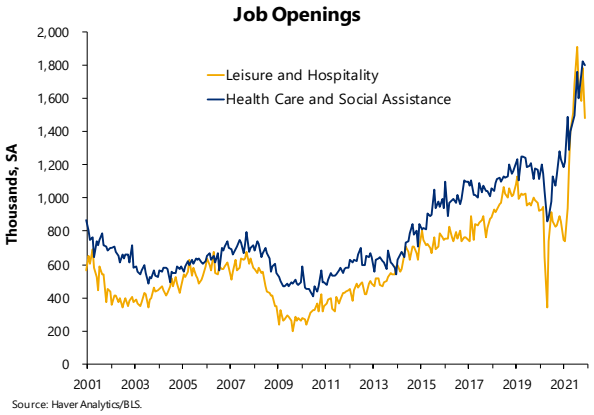
The increased rate of early retirement was not limited to older workers. In November 2021, workers resigned from 4.5 million jobs, as job quit rates rose to an all-time high of 3.0 percent. This unusual increase in the quit rate is emblematic of what has been coined the "Great Resignation." During this period, with the help of extended unemployment benefits, increasing house prices, and stock market gains, workers had a chance to reassess their working conditions. Many workers quit their jobs seeking more flexible working conditions, better pay and benefits, and new career paths.[1] A pandemic-driven labor force exodus was marked by workers who have health concerns due to returning to in-person work and those who are caring for dependents (children, elderly, ill, or disabled).[2] Higher voluntary job quit rates were observed among the employees who work in the sectors which are not suitable for remote work, such as leisure and hospitality, and health care and social assistance.

During the Great Resignation, labor shortages have arisen due to location and skill mismatches between unemployed workers and vacancies. The number of job openings has exceeded the number of unemployed workers since May of 2021.

[1] "American Workers are Burned Out, and Bosses are Struggling to Support," *Wall Street Journal*, December 21, 2021, https://www.wsj.com/articles/workerburnoutresignationspandemicstress11640099198?st=8h33k3bh4gm71u2&reflink=desktopwebshare_permalink.

[2] Elizabeth Weber Handwerker, Peter B. Meyer, Joseph Piacentini, Michael Schultz, and Leo Sveikauskas, "Employment recovery in the wake of the COVID-19 pandemic," *Monthly Labor Review,* U.S. Bureau of Labor Statistics, December 2020, https://www.bls.gov/opub/mlr/2020/article/employment-recovery.htm.





As the economy reopened and the number of infections fell through the summer of 2021, service-producing businesses accounted for the bulk of job gains as they tried to regain their workforces. In addition to the accommodation and food services industry, transportation, warehousing and utilities, and healthcare and social assistance sectors had the most job openings. Moreover, an increase in self-employment by over 800,000 during the pandemic also contributed to the current labor shortages faced by employers. For example, self-employment has increased the most in the construction sector, where labor shortages have been pronounced.[3] Labor shortages during the Great Resignation period may reflect a long-lasting shift in the work force. The widening gap between job openings and seekers, and the rapidly increasing voluntary job quit rate suggest that labor market conditions continued to tighten in 2021.

Outlook

The continued weakness in private services employment is widespread. As the risk of a new winter COVID wave has risen, the employment recovery in services sectors during 2022 is expected to be less robust than the strong growth experienced during the second and third quarters of 2021. After growth of 2.7 percent in 2021, total nonfarm employment growth of 3.5 percent is projected for 2022, followed by 1.9 percent growth for 2023. The level of nonfarm employment is expected to finally surpass its first quarter of 2020 level by the fourth quarter of 2022.

Based on projected private sector employment growth of 3.7 percent in 2022, following growth of 3.3 percent in 2021, the level of nonfarm employment in the private sector is expected to finally surpass its pre-pandemic peak by the third quarter of 2022. Public sector employment growth of 2.1 percent is projected for 2022 following two years of declines.

[3] Goldman Sachs US Economics Analyst, "Will Worker Shortages Be Short-Lived?", October 2021, https://www.gspublishing.com/content/research/en/reports/2021/10/04/be005ed1-1b6b-42f7-af9b-fb209077ca35.html.

With improvements in employment and relatively weak labor force participation, the unemployment rate is likely to edge lower in 2022, averaging 3.8 percent for the year, followed by 3.5 percent in 2023.

Risks

Surges in infections and hospitalizations due to Omicron and other new strains of COVID could delay the return to in-person work, prolong labor shortages, and reduce demand for services. Rising production or borrowing costs, due to lingering supply chain issues, higher commodity prices, or higher than expected interest rates could lead to lower demand for labor, reducing hiring.

Inflation

Key Points

- Consumer price inflation has accelerated significantly since February 2021 due to rebounding energy prices, supply-chain disruptions, the reopening of the services sector, and excess consumer demand supported by Federal emergency relief programs passed during the darkest days of the pandemic. Year-over-year growth in the headline CPI has remained above 5 percent since June 2021, and reached 6.8 percent in November, a rate of inflation not seen since 1982.

- The global surge in energy prices is partly responsible for the unrelenting high inflation witnessed in 2021. Brent crude oil climbed markedly in price from $55/barrel at the beginning of 2021 to around $80/barrel in the last quarter, while natural gas prices surged to a decade high. But these elevated price levels are not expected to be sustained, putting downward pressure on the inflation outlook for 2022.

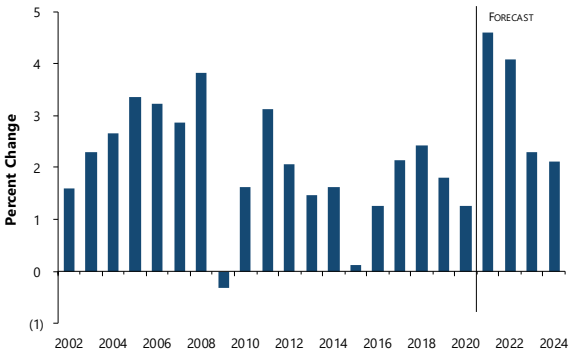
- Core inflation also surged in 2021, initially driven by the reopening of the services sectors. Car rental prices, airfares, and hotel room rates picked up rapidly during the first half of the year before being hit by moderation in demand due to the spread of the Delta variant. Later in the year, rents accelerated in a lagged response to soaring house prices.

- Meanwhile, core goods prices also soared due to the combined impact of global supply constraints and a domestic shift away from high-contact services consumption to goods purchases, predominantly made online. In an often-cited example, global chip shortages have resulted in automotive production shutdowns and price hikes in both new and used motor vehicles. These inflationary pressures are expected to ease but are unlikely to fully dissipate for several months.

- Near-term inflation expectations rose rapidly in 2021, while longer-term inflation expectations remained anchored. According to the University of Michigan's survey, expected inflation for 2022 surged from 2.5 percent at the end of 2020 to 4.9 percent at the end of 2021. Meanwhile, expected inflation for the next five years rose from 2.5 percent to 3.0 percent.

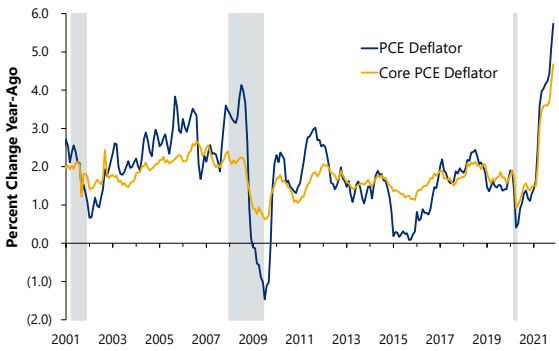
- Consumer price inflation is estimated to have surged 4.6 percent in 2021, followed by a projected 4.1 percent for 2022. Inflation is expected to moderate thereafter to slightly above its pre-pandemic trend of about 2.0 percent, with the Federal Reserve expected to accelerate the tapering of its asset purchases and initiate a series of interest rate hikes in 2022 in an attempt to bring inflation closer to its long-term target. The diminishing impact of Federal emergency spending programs is also expected to support the DOB outlook.

Consumer Price Index (CPI)



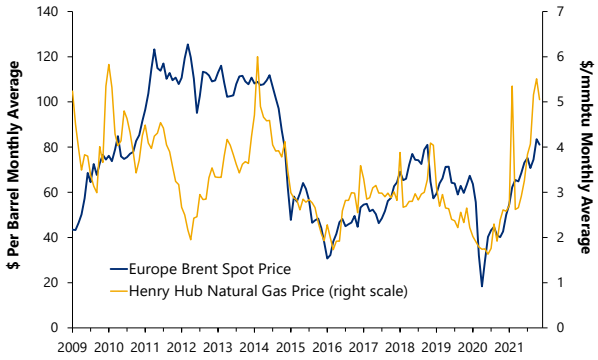
Source: Haver Analytics/BLS; DOB staff estimates.

Personal Consumption Expenditure (PCE) Deflator



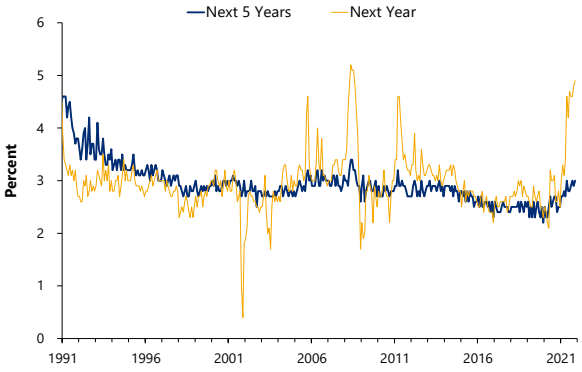
Note: Shaded areas represent U.S. recessions.
Source: Haver Analytics/BEA.

Energy Prices



Source: Haver Analytics/EIA/WSJ.

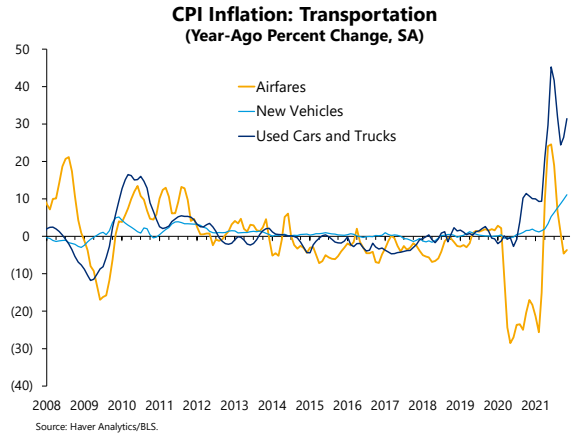
University of Michigan: Expected Inflation Rate

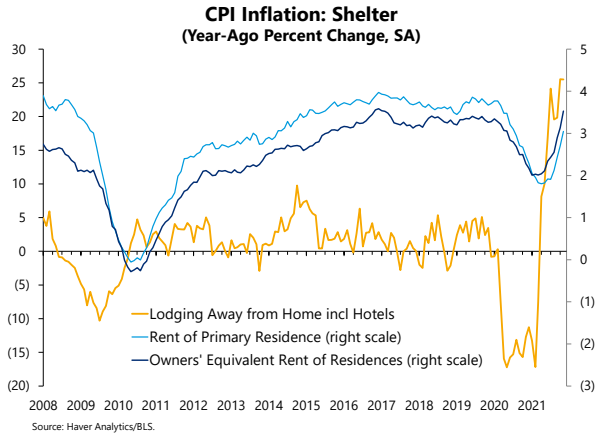


Source: Haver Analytics/University of Michigan.

Recent Developments

As of November 2021, the headline CPI increased 6.8 percent from a year ago, significantly above its pre-pandemic trend of around 2.0 percent. The energy component of the CPI soared 33.3 percent, the food index rose 6.1 percent, and the core CPI, which excludes food and energy prices, increased 4.9 percent. Among the components of the core CPI basket, motor vehicles, rents, airfares, and hotel costs were key drivers of inflation in 2021. The 12-month change in the used cars and trucks index peaked in June at 45.2 percent, while the new vehicles index continued going up until November, reflecting sustained supply shortages of microchips and drastically higher shipping costs for imported vehicles and parts. Rent of primary residence and owners' equivalent rent, representing a combined share of about 40 percent of the core CPI basket, rebounded in 2021 in a lagged response to skyrocketing home prices. As students moved back to their college towns after colleges reopened to in-person learning and workers moved back to cities to return to their offices at least on a part-time basis, rental prices in those towns and cities started to rise faster in the fourth quarter of 2021.





Both airline fares and hotel rates soared by over 20 percent from a year ago in the middle of 2021, but as COVID infections surged again in July due to the Delta variant, airline fares retreated significantly while hotel rates retreated only slightly. As of November 2021, the airfare index was still 20.1 percent below its February 2020 level, while hotel rates had recovered to 9.6 percent above their February 2020 level.

The core personal consumption expenditures (PCE) price index, which is closely monitored by the Federal Reserve, has exceeded the central bank's target of 2.0 percent on a year-over-year basis since April 2021 and reached 4.7 percent growth as of November 2021.

Outlook

Near-term inflation is expected to remain elevated for three reasons. First, prices temporarily depressed by the pandemic will continue to rise as COVID infections unwind and the economy recovers. Second, supply-chain bottlenecks are likely to persist well into 2022. Third, significant labor shortages will continue generating upward pressures on wages and thus goods and services prices.

In the longer term, as supply-chain disruptions subside, inflation within some consumer price categories is expected to ease. Shifts of spending back toward services should also ease demand for goods and restrain goods inflation. Meanwhile, the dollar is likely to strengthen as the Federal Reserve tightens monetary policy, putting downward pressure on the cost of imports and indirectly on prices of domestic goods. In addition, energy prices are expected to recede from their multi-year highs, becoming a drag on inflation.

As a result, inflation is projected to experience another strong year with growth of 4.1 percent in 2022, following an estimated rise of 4.6 percent in 2021. Consumer price inflation is expected to moderate to 2.3 percent in 2023, modestly above the pre-pandemic trend and consistent with the Federal Reserve's long-run 2.0 percent inflation objective as an average, not a ceiling.

Risks

Near-term inflation risks are currently biased towards the upside. There are several sources of inflationary pressure that are deemed unlikely to be permanent but could persist longer than expected. For example, if new waves of COVID infection exacerbate current global supply-chain disruptions and labor shortages, production input and freight costs could continue to increase, and firms might have to pass along these cost increases to consumers. Moreover, if commodity prices continue to rise with strengthening economic activity, headline inflation could be pushed higher.

Longer-term, the fading impact of emergency Federal spending programs on household demand, combined with the easing of global supply-chain constraints, is expected to mitigate these short-term risks. However, if households and businesses begin to anticipate that existing price pressures will persist, there is a risk that medium-term inflation expectations could drift upward and lead to a self-fulfilling rise in wages and prices.

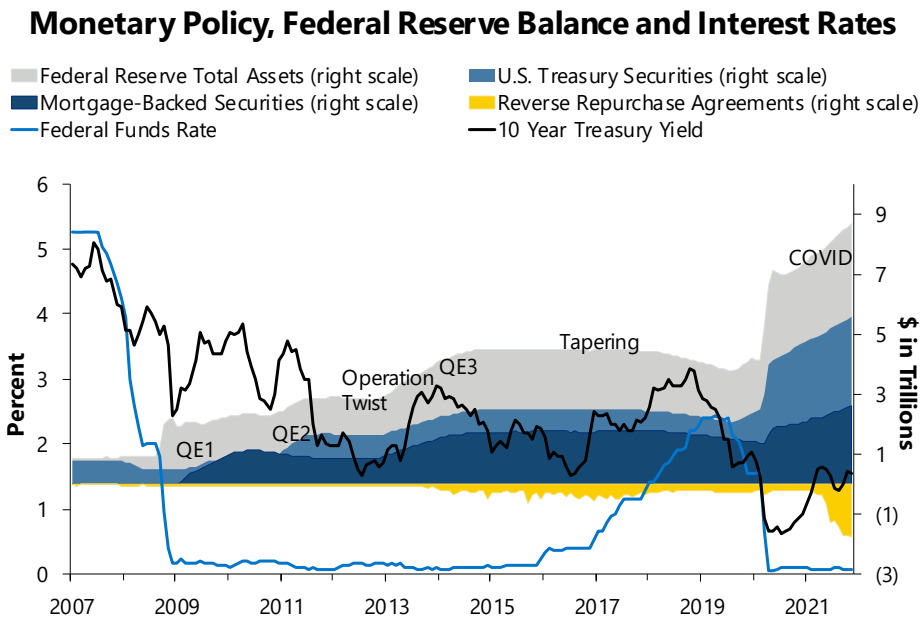
Federal Reserve

Key Points

- DOB expects that the Federal Reserve will increase the target range for the federal funds rate three times in 2022, with three increases also likely in 2023, as the central bank comes to grips with a bout of inflation that no longer appears "transitory" and is higher than had been anticipated.

- The Federal Reserve's balance sheet, which previously had topped out at $4.5 trillion in early 2015, had grown to an unprecedented $8.8 trillion by mid-December 2021 as part of the central bank's response to the COVID-19 pandemic. The Federal Reserve's "tapering" program, announced in November 2021 and accelerated in December 2021, is expected to end in March 2022, bringing this latest round of balance sheet expansion to a close.

- Current Federal Reserve Chair Jerome Powell has been renominated by President Biden for a new four-year term that will begin in February 2022, removing one potential source of policy uncertainty.



Source: Haver Analytics/Federal Reserve Board/U.S. Treasury.

Recent Developments

After an active 2020, monetary policy went "on hold" for the majority of 2021 with no changes to the federal funds rate target and – at least until November – no changes to the Federal Reserve's

asset purchase ("quantitative easing" or QE) program, either. The target range for the federal funds rate has remained at zero to 0.25 percent since it was reestablished in March 2020 as the centerpiece of the Federal Reserve's rapid pandemic response. In December 2020, the central bank initiated its QE program with the purchase of "at least" $80 billion in Treasury securities and $40 billion in agency mortgage-backed securities (MBS) each month. But with inflation running at its hottest pace since the 1980s, the central bank began to taper back these purchases in November. If asset purchase reductions proceed at the pace announced at the mid-December 2021 meeting of the Federal Open Market Committee's (FOMC), its QE program would end by mid-March 2022.[4]

Meanwhile, looming over the FOMC's future deliberations is the threat of inflation. The FOMC is no longer worried about an inability to reach its longer-run 2.0 percent inflation target. Instead, its concern is that inflation above 2.0 percent not become imbedded in expectations and thus become difficult to tame. January 2021's FOMC statement said that "Weaker demand and earlier declines in oil prices have been holding down consumer price inflation."[5] According to the March statement, inflation was still running below 2.0 percent. But in April, "Inflation has risen, largely reflecting transitory factors."[6] The FOMC maintained this wording until the September statement, when inflation was said to be "elevated" though still "largely reflecting transitory factors." By November the FOMC said that the elevated inflation was "largely reflecting factors that are expected to be transitory" and that "Supply and demand imbalances related to the pandemic and the reopening of the economy have contributed to sizable price increases in some sectors."[7] Note the shift in tone in the November statement, as the factors causing higher prices are now *"expected"* to be transitory, as opposed to prior months when the factors were declared to be "transitory" without qualification. However, the word "transitory" disappeared from the December statement, and the FOMC instead said that "Supply and demand imbalances related to the pandemic and the reopening of the economy have continued to contribute to elevated levels of inflation."[8] The FOMC also explicitly noted that "inflation developments" were part of the rationale for speeding up the tapering of asset purchases in December 2021.

Recent developments have led many to wonder whether the central bank has been behind the curve in reigning in the broadest inflationary trends seen since the 1990s. If the Federal Reserve fails to act in a timely manner, it risks what may have started as transitory becoming endemic. The FOMC's favored inflation measure, the price index for personal consumption expenditures excluding food and energy ("core PCE"), remained below 2.0 percent on a year-over-year basis from January 2019 (it was at 2.1 percent in December 2018) through February 2021 when it increased 1.5 percent. It reached 2.0 percent in March 2021, then 3.1 percent in April followed by 3.5 percent in May. By November, it hit 4.7 percent, the highest since February 1989. Readings for

[4] Federal Reserve press release, December 15, 2021, available at https://www.federalreserve.gov/monetarypolicy/files/monetary20211215a1.pdf.
[5] Federal Reserve press release, January 27, 2021, available at https://www.federalreserve.gov/monetarypolicy/files/monetary20210127a1.pdf.
[6] Federal Reserve press release, April 28, 2021, available at https://www.federalreserve.gov/monetarypolicy/files/monetary20210428a1.pdf.
[7] See footnote 1 above for source document.
[8] See footnote 2 for source.

the headline all-items Consumer Price Index (CPI) have been more dramatic, with the November CPI up 6.8 percent on a 12-month basis, the largest such gain since June 1982.

Outlook

With QE tapering likely completed by early spring, DOB expects that the FOMC will proceed to the next phase of its inflation battle and follow the clues in the December "dot plot" of anticipated federal funds rate targets made by attendees of that month's FOMC meeting.[9] The plot indicates that three increases in the federal funds rate target is the most likely scenario for 2022 and three more in 2023. Consistent with this and DOB's outlook for real output growth, the effective federal funds rate is expected to rise from 0.1 percent on an annual average basis (effectively zero) in calendar 2021 to 0.3 percent in 2022 and 1.2 percent in 2023.

Risks

The main risks to DOB's monetary policy forecast are the effects of the COVID-19 pandemic. If the Omicron variant is milder than expected, resulting in stronger economic growth, the FOMC may find that more than three interest rate hikes are required to confront the nation's current bout with inflation. The current forecast is consistent with inflation expectations remaining anchored, but if evidence should emerge that this is not the case, the FOMC could choose to hike further than expected. In contrast, if the current wave is more damaging to the economy than anticipated, the price of energy and other goods could fall faster, delaying one or two of this year's expected rate hikes into 2023.

[9] See page 4 of the "Summary of Economic Projections," December 15, 2021, Board of Governors of the Federal Reserve System, available at https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20211215.pdf.

Financial Markets

Key Points

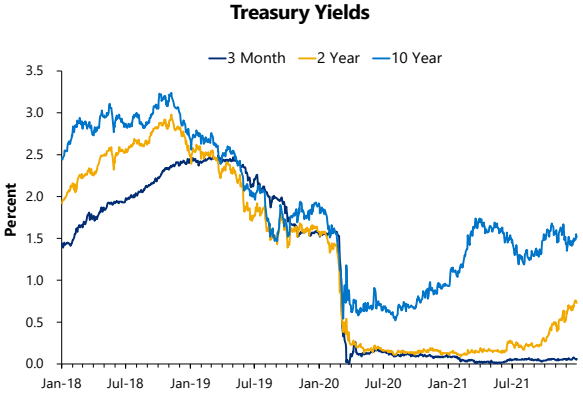
- With financial markets now anticipating an accelerated pace of monetary tightening, the 2-year Treasury yield, which typically reflects expectations pertaining to how the Federal Reserve's short-term interest rate policy will evolve over the next two years, has risen accordingly. As of December 2021, the 2-year Treasury yield had gained over 50 basis points from the 0.12 percent monthly low posted in February 2021.

- Longer-term interest rates made gains during 2021 as well, but with fluctuations tied to the global economic recovery and COVID-19. The 10-year Treasury yield stood at 1.1 percent in January 2021, rising above 1.6 percent in the spring in response to a strengthening recovery, aided by fiscal stimulus and widespread vaccinations. The 10-year yield fell below 1.3 percent in August as the Delta variant surged in the U.S. but has since risen though with some volatility due to uncertainty over the ultimate impact of the Omicron variant.

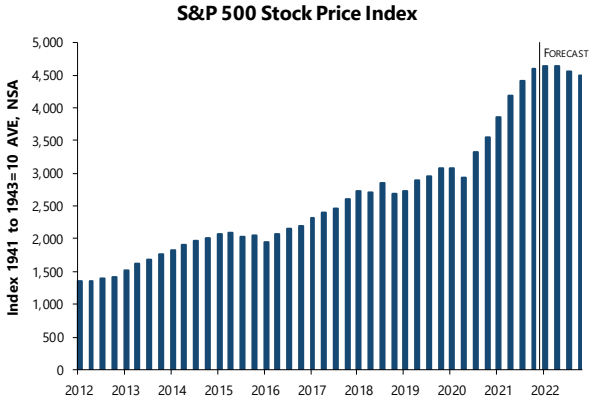
- Equity markets continued reaching new highs in 2021 as additional fiscal stimulus was implemented, the economic recovery accelerated, corporate earnings improved, and interest rates remained low. The S&P 500 stock price index ended 2021 at December's monthly average of 4,675, up 26.5 percent from December 2020.

- Volatility in equity prices was relatively tame in 2021, as illustrated by the drop in the CBOE Market Volatility Index (VIX) below 20 from its height of above 50 in March 2020. However, uncertainty over the passage of the American Rescue Plan at the beginning of 2021, combined with the emergence of Delta over the summer and Omicron toward the end of the year, resulted in noticeable, albeit temporary, declines in stock prices.

- Growth in equity prices is expected to moderate in 2022 as interest rates rise and corporate profits retreat, under pressure from higher wages and input price inflation.

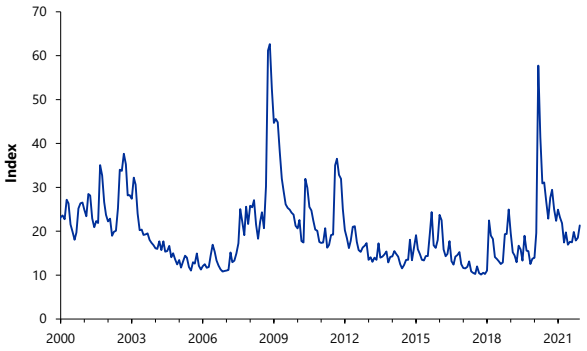


Source: Haver Analytics/FRB.



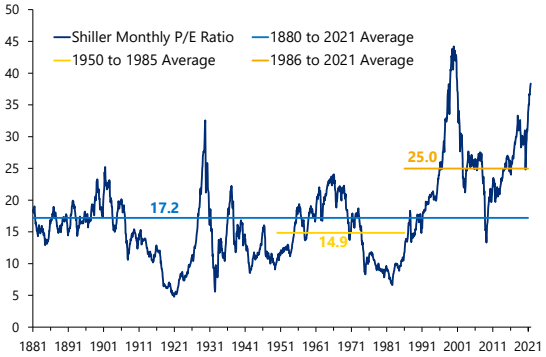
Source: Haver Analytics/S&P; DOB staff estimates.

CBOE Market Volatility Index (VIX)



Source: Haver Analytics/WSJ.

Shiller Cyclically Adjusted Price-to-Earnings (P/E) Ratio



Source: Robert Shiller; DOB staff estimates.

Outlook

With short-term interest rates expected to rise in 2022, long-term interest rates are anticipated to grow as well. The 10-year Treasury yield is projected to gradually increase from 1.4 percent on average in 2021 to 2.0 percent in 2022 and 2.7 percent in 2023.

Surging COVID-19 cases due to Omicron have added to the existing economic headwinds for the coming year. Moreover, stock prices in 2022 are expected to reflect weaker earnings due to the waning of pandemic-era Federal subsidies to businesses that boosted corporate profits in 2021. Over the long-term, stock price growth is projected to slow, mirroring expected growth in corporate earnings, discounted by the change in interest rates, which are expected to increase in 2022. The S&P 500 stock price index is projected to decline by 1.9 percent in 2022 on a fourth quarter-over-fourth quarter basis, following year-ago growth of 29.4 percent for the fourth quarter of 2021.

Risks

The emergence of more infectious and deadlier COVID strains could threaten equity market fundamentals should they provoke strong consumer or government responses. However, the real challenge for financial markets continues to be whether fundamentals can catch up with current historically high P/E ratios, which continue to accelerate, as shown above. Stock market performance could be impacted negatively if the Federal Reserve increases its target rate more or sooner than anticipated. On the other hand, if COVID-19 is successfully contained, via increased vaccination or new therapeutics that lead to faster easing of supply chain shortages and hence lower input price inflation, stock market growth could be higher than reflected in this forecast.

Personal Income and Household Wealth

Key Points

- Real disposable personal income declined 4.3 percent at an annual rate in the third quarter of 2021, following an unprecedented 29.0 percent plunge in the second quarter, and a record 54.6 percent surge boosted by two rounds of Federal stimulus in the first quarter. Real disposable income is estimated to have increased 2.2 percent in 2021 but is projected to drop 3.5 percent in 2022 as most fiscal stimulus programs expired by the end of 2021.

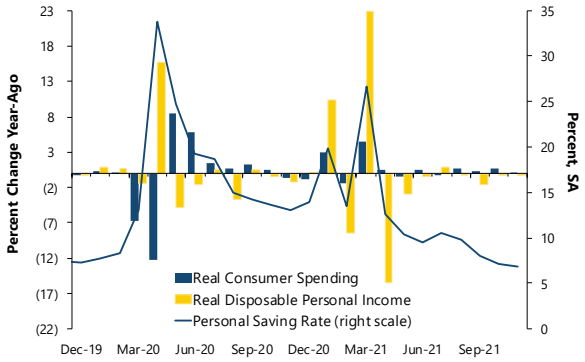
- The American Rescue Plan Act (ARP), together with the Consolidated Appropriations Act of 2021 enacted at the end of 2020, provided $2.8 trillion in economic relief largely for 2021. BEA estimates that the Federal pandemic response programs boosted personal income by over $1.1 trillion (not annualized) from January to November 2021, even higher than the subsidies distributed in 2020. Over 90 percent of these fiscal stimulus payments impacting personal income took the form of transfer payments to individuals, while the rest supported proprietors' income.

- The massive Federal stimulus that fueled transfer payments early in the year waned during the middle two quarters of 2021. As all of the expanded pandemic-era Unemployment Insurance (UI) programs expired on Labor Day, payments under these programs declined sharply in September. Offsetting this deceleration in non-wage income, growth in wage income picked up rapidly, augmented by upward pressure on average hourly earnings.

- Household savings spiked at the onset of the pandemic – primarily due to the fiscal stimulus payments – but growth slowed significantly throughout 2021. The personal saving rate dropped from a peak of 33.8 percent in April 2020 to 6.9 percent by November 2021, below its pre-pandemic level, and thus, leaving less scope for households to boost their spending.

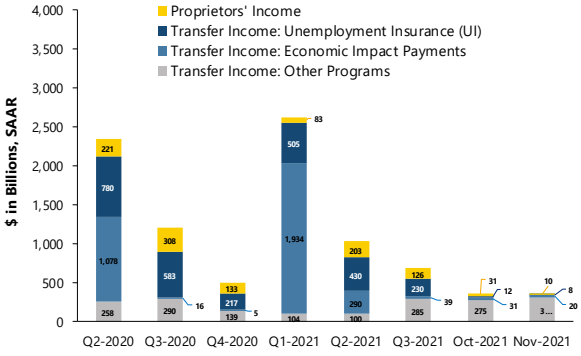
- Household balance sheets are healthy overall. Household debt and financial obligations ratios remain low when viewed in a historical context. The two largest components of household wealth, real estate and equity holdings, saw robust growth in 2021 as the S&P 500 stock price index registered record highs as of December. As a result, 2021 is estimated to have been a solid year for growth in household net worth. These factors will support strong growth in consumption when pandemic concerns recede.

Disposable Personal Income and Saving Rate



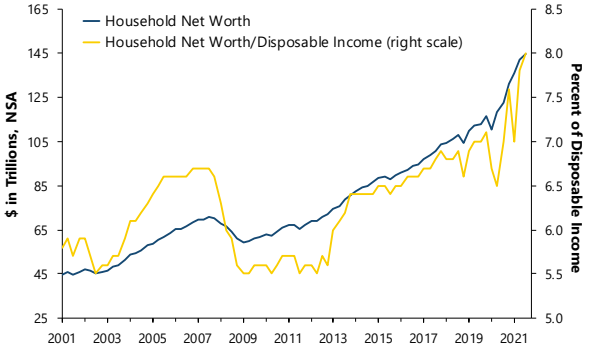
Source: Haver Analytics/BEA

Income Support from Pandemic Relief Programs



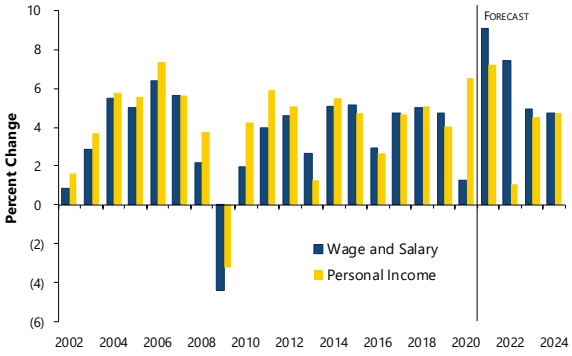
Source: Haver Analytics/BEA

Household Net Worth



Source: Haver Analytics/BEA

U.S. Wage and Personal Income Growth



Source: Haver Analytics/BEA; DOB staff estimates.

Recent Developments

Nominal wage and salary compensation of employees rose rapidly against the backdrop of a tight labor market in the second half of 2021. Wage and salary disbursements in November 2021 were 8.9 percent higher than their November 2020 level. However, real wage growth has been undercut by recent strength in inflation. Rental income continued to grow in 2021 as demand for rentals, especially apartments that were abandoned in 2020, rose in response to a return of economic activity. Personal interest and dividend incomes are catching up too, approaching their pre-pandemic peaks by the end of 2021.

Meanwhile, Federal pandemic relief programs, which boosted transfer income and proprietors' income in the first quarter of 2021, became a drag in the rest of the year. BEA reported that two rounds of Economic Impact Payments to households (up to $600 and $1,400 per person, respectively) provided the largest boost to personal income in January, March, and April of 2021. As these payments slowed, Pandemic Unemployment Compensation payments (PUC), which provided an additional $300 per week to individuals who were collecting regular unemployment compensation, became the main source of stimulus to personal income between May and June. In

July, advance payments from the expanded Child Tax Credit started to distribute to eligible households, while some states started to retire the expanded unemployment insurance (UI) benefits. By September, all of the expanded UI benefits expired, resulting in a sharp decrease in personal income that month. These payments continued to diminish over October and November 2021 according to BEA.

Outlook

DOB estimates that U.S. wage income has significantly strengthened in 2021, increasing 9.1 percent after growing only 1.3 percent in 2020. Payroll employment continued to recover in 2021, but wage growth was mostly driven by upward pressures on average hourly earnings amid labor shortages, which are expected to continue into 2022. The outlook for non-wage income is highly impacted by the Federal fiscal stimulus programs, which provided firm support in 2021 while becoming a significant drag in 2022. On balance, personal income is estimated to increase 7.2 percent in 2021, following 6.5 percent growth in 2020; personal income growth is anticipated to slow to 1.1 percent in 2022 as stimulus funding dissipates. However, household net worth growth is expected to remain strong in the next few years with continued growth in equity and housing markets, thus supporting continued strength in consumer spending when pandemic concerns recede.

Risks

Downside risks to the personal income outlook tie mainly to the pace of recovery of the labor market, which could be delayed by the emergence of new COVID-19 variants. Prolonged supply-chain disruptions could depress employment in the high-wage manufacturing industry and mid-wage construction industry. In addition, corrections in equity and housing prices could potentially depress household wealth.

On the upside, if labor markets recover faster than expected or additional fiscal support were to be provided, personal income and household wealth would grow faster than projected. In particular, the state and local government funding provided by the ARP Act or infrastructure bills could boost more hiring and wage growth than expected in the public sector which represents a notable source of mid- to high-wage jobs.

Consumer Markets

Key Points

- Fueled by two rounds of Federal fiscal stimulus, real consumption surged again in the first quarter of 2021 at an annualized rate of 11.4 percent, followed by 12.0 percent growth in the second quarter. By the end of the first quarter of 2021, the real consumption level had exceeded its pre-pandemic peak reached in the fourth quarter of 2019.

- Households have been stockpiling excess savings since the start of the pandemic. After reaching its all-time high level at 33.8 percent in April of 2020, the personal savings rate once again increased to 26.6 percent in March of 2021. The release of these savings unleashed a wave of pent-up demand during the first half of 2021. The savings rate had fallen below its pre-pandemic level by the fourth quarter.

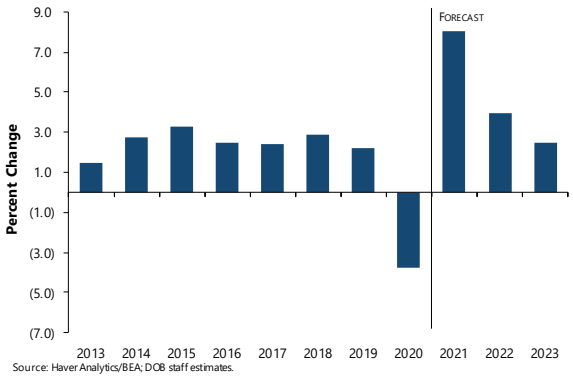
- The pace of real consumption growth slowed to only 2.0 percent in the third quarter of 2021. Renewed caution under the Delta wave of COVID infections, fading fiscal stimulus, and supply shortages, particularly of motor vehicles, triggered this marked slowdown in consumer spending.

- Despite high inflation, real consumer spending remained strong coming into the fourth quarter of 2021. Spending on services has continued to grow at a strong pace; food and accommodation, transportation, and recreation services spending all saw an uptick when the Delta wave eased, and international travel bans were lifted for vaccinated tourists. In addition to services, domestic auto and light truck sales also edged up in October and November.

- Consumer confidence rose sharply during the first half of 2021, hitting the highest level since the pandemic began, as the rapid rollout of vaccines and another round of Federal financial support boosted optimism. However, with the onset of the Delta variant, the Conference Board Consumer Confidence index has declined for three consecutive months starting in July. Although it increased in October as COVID cases started to fall, it continued to climb in November and December as inflation concerns rose among consumers.

- Real consumption is estimated to rebound and increase 8.1 percent in 2021 after contracting 3.8 percent in 2020. Real consumption growth is projected to gradually slow to 4.0 percent in 2022 and 2.5 percent in 2023.

Real Consumer Spending

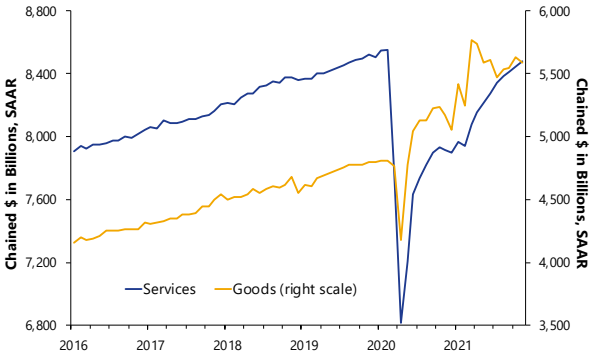


Source: Haver Analytics/BEA; DOB staff estimates.

Consumer Confidence Index

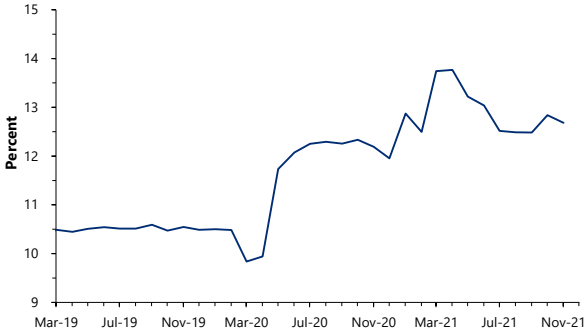
Note: Shaded areas represent U.S. recessions.
Source: Haver Analytics/The Conference Board.

Real Consumer Spending Shifts From Goods Toward Services



Source: Haver Analytics/BEA.

Nominal Durable Goods Consumption as a Share of Total Nominal Consumption



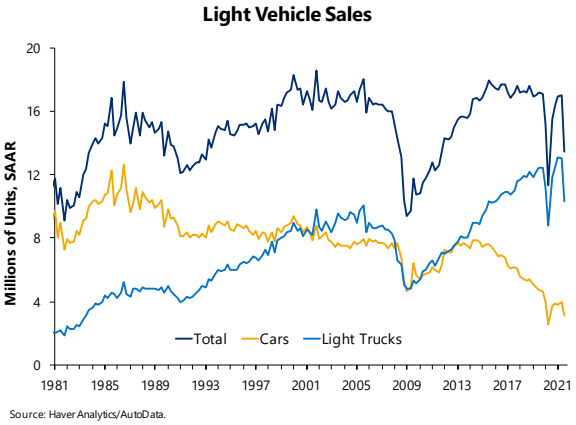
Source: Haver Analytics/BEA.

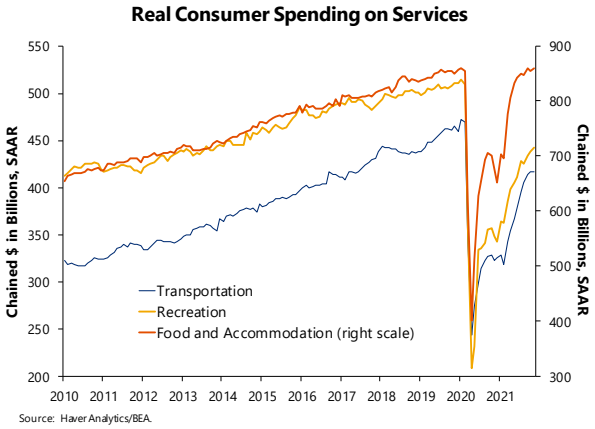
Recent Developments

In response to the easing of restrictions on business and public settings, real consumption increased rapidly at an annual rate of 11.4 percent in the first quarter of 2021 and 12.0 percent in the second quarter. However, the Delta wave of infections, waning fiscal stimulus, and supply constraints, particularly within the motor vehicle industry, triggered a noticeable slowdown to a 2.0 percent rate in the third quarter of 2021.

Durable goods consumption started strong in the first quarter of 2021. Sales in the automotive industry recovered quickly as auto loan rates fell and demand shifted from public to private transportation. Early in the second quarter of 2021, the auto sector experienced significant supply disruptions as shortages of microprocessors sharply curtailed production. After surpassing their pre-pandemic levels in March and April 2021, sales of new auto and light truck vehicles began to decline. Total sales of new light vehicles plummeted more than 60 percent at an annual rate in the third quarter of 2021. As a result of weakening light vehicle sales, real consumption of durable goods started to decline, plunging by 24.6 percent at an annual rate in the third quarter. Spending on durable goods, as a share of total nominal consumption, decreased to 12.5 percent in July of

2021 after peaking at 13.8 percent in April, the highest value since the onset of the pandemic. In the fourth quarter of 2021, the share is estimated to increase, albeit slowly, due to increases in spending for motor vehicle and parts, as well as furnishings and household equipment.





Following the easing of restrictions on most business and public settings, real consumption of services also made a comeback in the second quarter of 2021 with an annualized quarterly increase of 11.5 percent. Within services, increases were widespread with the largest contributions coming from recreation and transportation services, and health care. However, the rapid spread of the Delta strain in the summer renewed consumers' caution of participating in social activities, including dining out and live entertainment, resulting in a modest decrease in the pace of the spending growth on services in the third quarter.

Real spending on food and accommodation is estimated to reach its pre-pandemic level in the fourth quarter of 2021. However, it is expected to take much longer for spending on transportation and recreation services to reach their pre-pandemic levels. Pent-up demand is expected to play a role in 2022 as consumers spend their excess savings on travel and leisure activities they missed during the pandemic unless new variants, such as Omicron, lead to renewed restrictions.

Outlook

The steep 24.6 percent decline in real durable goods consumption in the third quarter of 2021 was premised more on supply constraints than on waning demand. Although fourth-quarter growth is estimated at 9.0 percent due to recovering vehicle sales, the outlook for 2022 is much weaker since supply shortages are expected to continue well into this year. DOB projects a decline of 1.6 percent for real durable goods consumption in 2022, following 18.6 percent growth in 2021.

DOB expects a solid increase in consumer demand for services in 2022, supported by strong wage growth and elevated household net worth. After an estimated 9.4 percent increase in 2021, nominal consumption of services is forecast to grow at 9.7 percent in 2022 and 6.4 percent in 2023. However, real consumer spending is expected to be weaker due primarily to rising nondurable goods and services prices, as households are forced to reduce their discretionary spending and

devote more of their income to essential goods and services spending. DOB projects an increase of 4.0 percent for real consumption in 2022, following 8.1 percent growth in 2021. Real consumption growth is projected to slow down further to 2.5 percent in 2023.

Risks

Downside risks to the consumption forecast include persistence of the COVID-19 pandemic with the threat of new variants such as Omicron, worsening supply disruptions, and higher than expected inflation. Sources of upside potential include higher labor force participation resulting in higher employment and wages, a stronger stock market leading to increases in household net worth, and further progress in the development of therapeutics against COVID.

Business Fixed Investment

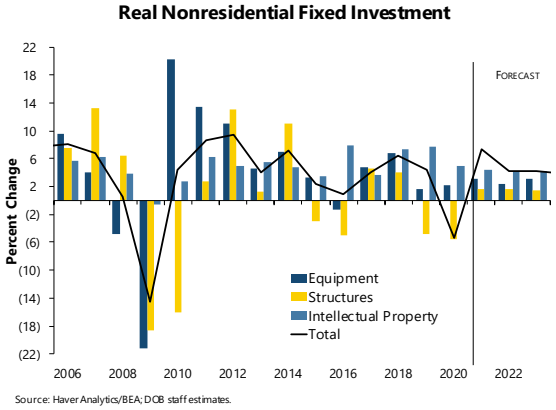
Key Points

- Benefiting from a broadly recovering economy, business fixed investment, particularly in equipment, grew robustly during the first half of 2021 and surpassed its pre-pandemic level. However, information processing equipment investment has started to slow as many businesses had already completed the upgrades necessary to support telework. More generally, real investment in equipment has been plagued by global supply-chain disruptions and declined 2.4 percent at an annual rate in the third quarter of 2021. Motor vehicle production and commercial aircraft orders suffered the most noticeable negative impact due to limited supplies of semiconductors and global travel restrictions, respectively.

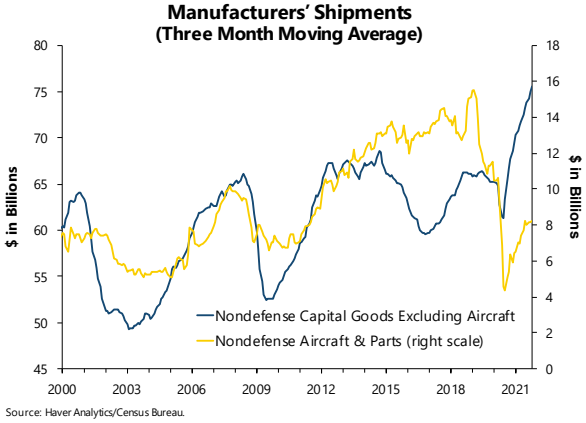
- Real investment in intellectual property products (IPP) was the category least affected by the pandemic. As of the third quarter of 2021, it had grown at near double-digit rates for all five quarters since the pandemic-induced decline in the second quarter of 2020. Following 2.8 percent growth for all of 2020, real IPP investment is estimated to have grown 10.0 percent in 2021 and is projected to grow steadily at 6.8 percent in 2022 and 5.0 percent in 2023.

- The weakness in nonresidential structures investment continued in 2021 with an estimated decline of 7.8 percent, as delays in the return to offices have restricted office construction. DOB forecasts a small decline of 1.2 percent for nonresidential structures investment in 2022 before growing 2.3 percent in 2023.

- Total real nonresidential fixed investment is estimated to rebound by 7.5 percent in 2021, following a 5.4 percent decline in 2020, and is projected to grow steadily at 4.1 percent in 2022 and 4.2 percent in 2023.

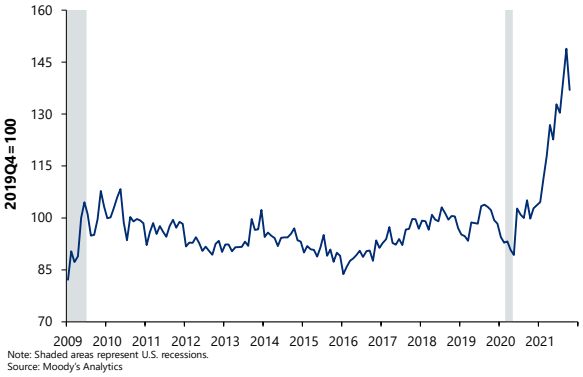


Source: Haver Analytics/BEA; DOB staff estimates.



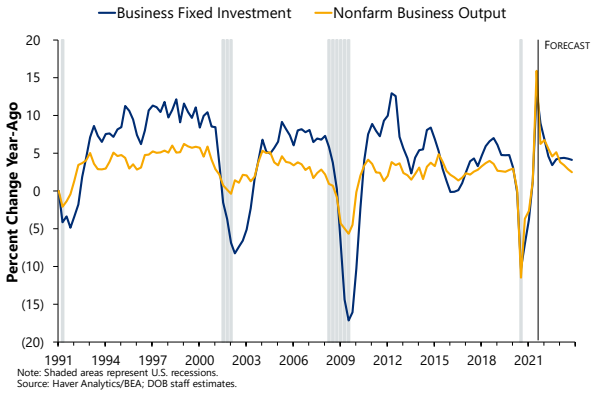
Source: Haver Analytics/Census Bureau.

Supply-Chain Stress Index



Note: Shaded areas represent U.S. recessions.
Source: Moody's Analytics

Real Business Fixed Investment vs. Nonfarm Business Output



Note: Shaded areas represent U.S. recessions.
Source: Haver Analytics/BEA; DOB staff estimates.

Recent Developments

Business fixed investment spending, particularly on equipment, experienced a surge in demand in the first two quarters of 2021. Except for transportation equipment, capital spending in all categories of equipment investment has surpassed its pre-pandemic level. Information processing equipment investment, which accelerated the most during the first year of the pandemic, started to slow down in the second quarter of 2021, as a preponderance of businesses had already completed their investments in support of expanded telework.

As a leading indicator for equipment investment, manufacturers' new orders for nondefense capital goods excluding aircraft surged in 2021 and rose well above its prior peak in February 2012. However, surging demand for capital equipment was not met by actual shipments due to supply-chain bottlenecks, such as a shortage of truck drivers, long wait times at loading docks, and a backup of cargo ships at anchor off the shores of the nation's major ports. After declining 0.9 percent from January to February of 2021, manufacturing shipments of nondefense capital goods excluding aircraft started growing, albeit, at a slower pace relative to orders. The momentum in the growth of shipments subsided heading into the fourth quarter of 2021. Unfilled orders of nondefense capital goods excluding aircraft rose by double digits in the second and third quarters of 2021.

Transportation equipment investment continued to recover in the first half of 2021 before dipping in the third quarter due to declines in motor vehicle sales and commercial aircraft orders. Vehicle sales have been restricted by limited inventories, reflecting ongoing weakness in production tied to limited supplies of semiconductors. Business purchases of new auto sales plunged noticeably in the third quarter of 2021, decreasing by 22.3 percent in August and 11.9 percent in September

2021. Despite improvements in the production of Boeing's 737 MAX jetliners,[10] shipments of nondefense aircraft and parts decreased for two consecutive months in July and August of 2021, reflecting supply-chain disruptions and ongoing travel restrictions due to the surge in COVID cases.

Moody's Analytics recently constructed a U.S. Supply-Chain Stress Index (SCSI) to gauge the logistical strains that impact the economy. The SCSI is comprised of various metrics for production, inventory, and transportation. It is indexed such that 100 is the average pre-pandemic stress level in U.S. supply chains. The index has been on a steep upward trend since January 2021, reaching a level nearly 50 percent higher than the pre-pandemic norm by the end of September. In October 2021, the index saw the largest monthly decline since the pandemic began, dropping to 137.0, which shows signs of easing supply-chain strains.

The Conference Board's CEO confidence index substantially decreased from its all-time high level of 82 in the second quarter of 2021 to 65 in the fourth quarter. As a reading of less than 50 reflects more negative than positive responses, the most recent reading indicates that CEOs' assessments of current economic and business conditions have weakened but remained positive. The Conference Board indicated that, in the fourth quarter of 2021, 57 percent of CEOs expected to increase capital spending in the year ahead, up from 49 percent in the third quarter. Widespread labor shortages, low borrowing costs, and elevated business confidence are likely to boost capital spending and therefore production. However, disruptions in the supply chain and increases in prices appear to be holding back confidence.

Nonresidential investment in structures fell in seven out of the eight quarters since the last quarter of 2019. The only increase, in the first quarter of 2021, was in part due to increasing oil prices, which led to increases in real investment in mining exploration. The prevalence of remote work coupled with the delayed return to in-office work due to the surge in Delta-related infections led to further weakness in office construction. Reduced demand for accommodation services during the pandemic also reduced lodging construction. As a result, real investment in structures declined 3.0 and 4.1 percent in the second and third quarters of 2021, respectively.

Outlook

Real business fixed investment is expected to increase by 7.5 percent in 2021 on an annual average basis, after having fallen 5.4 percent in 2020. Steady growth in real business fixed investment of 4.1 percent for 2022 and 4.2 percent for 2023 is expected as labor shortages and other supply-chain issues resolve.

Real investment in equipment, which picked up an estimated 13.1 percent in 2021 after a decline of 8.3 percent in 2020, is expected to increase gradually by 4.1 percent at an annual rate in 2022 and

[10] Boeing's 737 MAX jetliners production made a solid comeback after Federal Aviation Authority (FAA) lifted the order that suspended the use of the plane by airlines under its jurisdiction in November 2020. Since the FAA's approval to return the 737 MAX to operations in November 2020, Boeing has delivered more than 195 737 MAX aircraft. In its third-quarter earnings report of 2021, the company announced upping the production of its 737 MAX aircraft from 19 a month to 31 a month in early 2022 (https://investors.boeing.com/investors/investor-news/press-release-details/2021/Boeing-Reports-Third-Quarter-Results/default.aspx).

4.3 percent in 2023. Real investment in structures, which plunged 12.5 percent in 2020, is estimated to have dropped 7.8 percent in 2021 and is projected to fall another 1.2 percent in 2022 before growing 2.3 percent in 2023. Real IPP investment has remained strong, growing an estimated 10.0 percent in 2021, and is forecast to continue to exhibit solid growth of 6.8 percent in 2022 and 5.0 percent in 2023.

Risks

The recovery in business fixed investment could be cut short by persistent inflation and a more virulent COVID-19 variant. The recent surge in infections could delay the easing of supply-chain bottlenecks and cause further inventory imbalances. Producers may remain constrained by hiring difficulties if labor shortages extend for a longer period. Fixed investment could be weaker if the Federal Reserve's rate hikes lead to higher-than-expected long-term interest rates, increasing borrowing costs for businesses. Alternatively, business fixed investment could be more robust than projected in this forecast if the global rollout of vaccinations and therapeutics is faster, helping to ease supply chain constraints earlier. In addition, stronger consumer demand, lower borrowing costs, lower inflation, and higher-than-anticipated Federal infrastructure spending could also stimulate investment beyond what is forecast here.

Housing Market

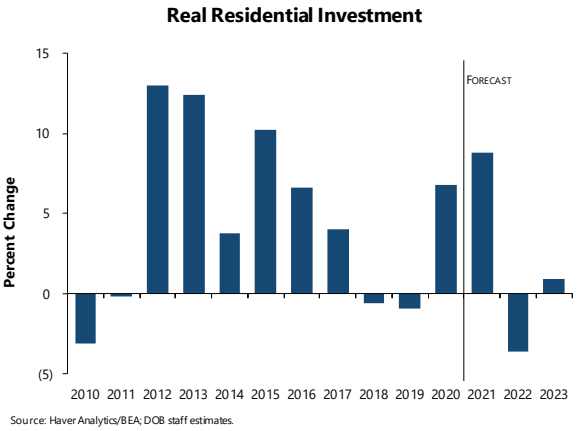
Key Points

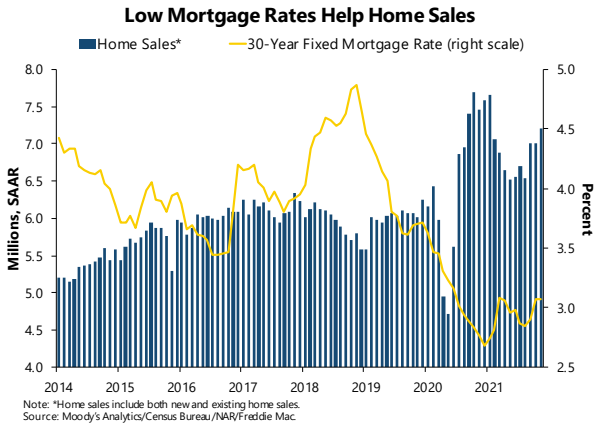
- Real residential fixed investment fell 7.7 percent in the third quarter of 2021 after dropping 11.7 percent in the second quarter, but a strong rebound of residential investment in the initial stages of the economic recovery kept its level above the pre-pandemic peak.

- The pandemic has only exacerbated the ongoing shortage in the supply of existing homes, further accelerating the rise in home prices. Supply-chain disruptions and labor shortages during the pandemic softened new home construction activity for most of 2021, while unseasonably mild weather and a relatively late Thanksgiving likely helped November 2021 housing starts rebound.

- Mortgage rates remained low throughout 2021, assisting home buyers in an otherwise challenging time. However, monetary tightening aimed at curbing the highest rates of inflation in three decades is expected to accelerate in 2022, leading to higher borrowing costs and dampening buyer demand.

- Growth in real residential investment is estimated to have peaked at 8.8 percent in 2021, followed by a projected decline of 3.6 percent in 2022.





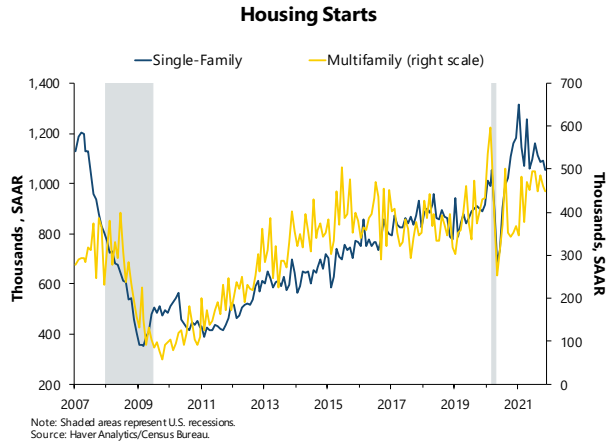
Recent Developments

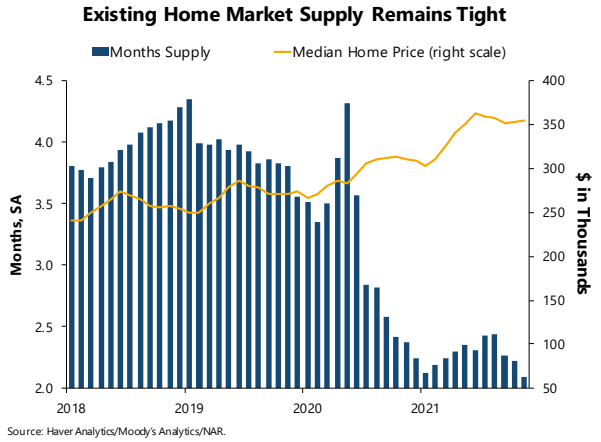
The residential housing market has been an economic bright spot since the onset of the COVID-19 pandemic, despite weakness in the middle of 2021. As of November 2021, new and existing home sales reached 7.2 million units (annualized), a level that is 3.4 percent below a year ago but 12.0 percent above the pre-recession peak reached in February 2020. Sales activity, through the first 11 months of the year, has been at the highest level since 2006. Although the average monthly interest rate for 30-year fixed mortgages inched up to 3.10 percent as of December 2021, from a

record low 2.68 percent in December 2020, home buyers still benefited from historically low rates. Therefore, real estate agent fees, an important factor in BEA's real residential fixed investment calculation, continued to be buttressed by strong sales activity and price appreciation in 2021.

While demand for homes remained remarkably strong, supply shortages of building materials and construction workers have inflated construction costs and slowed the pace of new home construction. Nevertheless, new home construction showed resiliency throughout the pandemic. Total housing starts recovered to their pre-pandemic peak at the end of 2020, and reached 1.725 million (annualized) in March 2021, the highest level since the Great Recession. Home building activity retreated afterwards, but as of November 2021 still stood 79.0 percent above their April 2020 trough, when shutdowns were in full effect. Housing starts strengthened in November, likely benefiting from unseasonably mild weather and a relatively late Thanksgiving. Single-family starts rose to an annualized 1.679 million units in November, the 16th consecutive month above 1.0 million and a trend not seen since 2007. Multi-family starts also showed strength in November 2021, recovering to only 5.2 percent below its February 2020 level.

Housing inventory remained exceptionally low in 2021. At the current sales pace, existing home inventories equate to a 2.1-month supply as of November 2021, the lowest in over 20 years. For the first 11 months of 2021, the months' supply measure for existing homes averaged 2.3 months, 29.0 percent lower than the same period a year ago and well below the six-month threshold generally associated with moderate price appreciation. Persistently limited supply amid strong demand continued to push up home prices and reduce affordability for potential buyers. The median sales price for existing homes climbed to $353,900 in November 2021, up 13.9 percent from its year-ago level.





Outlook

Mortgage rates are expected to increase over the course of 2022, based on an expectation of three federal funds rate hikes by the end of the year. The housing market is thus expected to cool down as well. After registering a strong 6.8 percent gain in 2020, growth in real residential fixed

investment is estimated to have peaked at 8.8 percent in 2021, followed by a projected decline of 3.6 percent in 2022.

Risks

If inflation remains high for a prolonged period, construction costs can be expected to continue to rise, pushing home prices up further. In that scenario, houses would become even less affordable, and consumer demand for houses would continue to be suppressed. If supply shortages of building materials and the lack of construction workers endure, new home construction would soften, further weakening residential investment and putting a damper on real estate inventory in an already tight existing-home market. In addition, higher-than-expected mortgage rates could put more downward pressure on future home sales than anticipated in this forecast.

Fiscal Policy

Key Points

- The Consolidated Appropriations Act of 2021, which was signed into law at the end of 2020 and included economic impact payments of $600 for low- and middle-income individuals ($1,200 for married couples), provided strong support for the U.S. economic recovery in the first quarter of 2021.

- In March 2021, the $1.9 trillion American Rescue Plan (ARP) was enacted, providing further stimulus. The ARP provided similarly targeted $1,400 ($2,800) stimulus checks, extended the supplemental unemployment insurance programs until September 2021, temporarily expanded tax credits, provided financial aid to state and local governments, and funded COVID vaccination and other mitigation efforts.

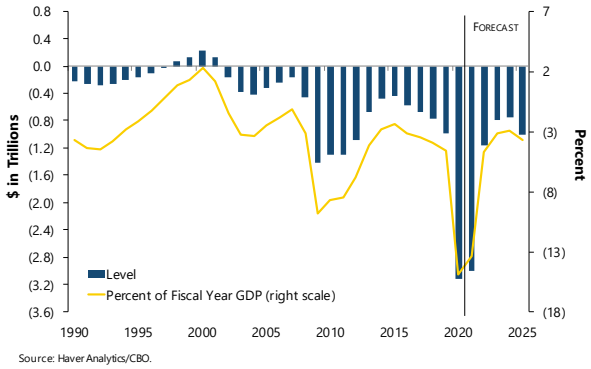
- During the remainder of the year, negotiations focused on a physical infrastructure bill aimed primarily at upgrading the nation's transportation network, including roads and bridges, and a larger reconciliation bill for "social infrastructure" that would expand Medicare, fund for clean energy projects, offer childcare assistance and universal pre-K, and invest in anti-poverty measures. DOB's economic forecast incorporates the $550 billion new funding from the first infrastructure bill, which was signed into law in November 2021. However, the forecast does not include the "Build Back Better" reconciliation bill as its size, scope, and timing remain uncertain.

- The impact of the Infrastructure Investment and Jobs Act (IIJA) on DOB's forecast is modest because the new funding will be spread over five years. The peak impact on annual real GDP growth is estimated to be 0.2 percentage point at most (in 2024), with the temporary boost to employment reaching 750,000 by the end of 2025 early 2026, but dissipating by 2031.[11]

- Real Federal government spending has remained elevated since the onset of the pandemic, while real state and local government spending did not pick up until recently. With Federal pandemic aid arriving on top of surprisingly robust wage growth, tax revenues for many state and local governments were unexpectedly strong. Both Federal spending and higher revenues are expected to support an acceleration in real state and local government spending over the next several years.

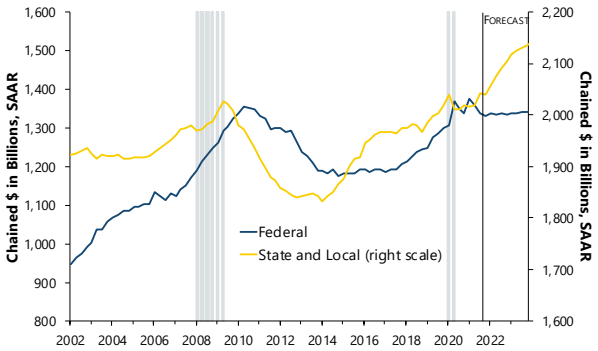
[11] IHS Markit, *U.S. Economic Outlook*, November 2021.

Federal Budget Balance



Source: Haver Analytics/CBO.

Real Government Spending



Note: Shaded areas represent U.S. recessions.
Source: Haver Analytics/BEA; DOB staff estimates.

Recent Developments

Many of the Federal pandemic relief programs that supported the U.S. economic recovery at the beginning of 2021 expired toward the end of the year when the focus of fiscal policy switched from pandemic relief to infrastructure investment. On November 15, President Biden signed the Infrastructure Investment and Jobs Act (IIJA) into law after months of negotiations, enacting $550 billion of new budget authority, mainly for spending on "physical infrastructure." The economic impact of the IIJA is expected to be modest.

SUMMARY OF FISCAL STIMULUS IN RESPONSE TO THE COVID-19 PANDEMIC (2021)

Legislation:	Amount (bil. $)	Expiration Date
American Rescue Plan Act (enacted on March 11)	**1,900**	
- Rebate Checks ($1,400 for Singles/$2,800 for Married Filing Jointly)	422	12/31/2021
- Extend UI Payments:		
Pandemic Unemployment Compensation (PUC, $300 per week)	115	9/6/2021
Pandemic Unemployment Assistance (PUA)	40	9/6/2021
Pandemic Emergency Unemployment Compensation (PEUC)	50	9/6/2021
- Expand Tax Credits:		
Child Tax Credit	110	12/31/2021
Earned Income Tax Credit (EITC)	26	12/31/2021
Dependent Care Assistance	8	12/31/2021
Credits for Paid Sick and Family Leave	6	9/30/2021
The Premium Tax Credit	46	12/31/2022
- Exempt $10,200 in 2020 UI Income from Federal Income Tax	25	na
- Small Business Assistance	50	na
- Aid to State and Local Governments	350	na
- Fund Vaccination, Testing, and Other COVID Containment Efforts	160	na
- Fund School Reopening and Increase Funding to Schools and Colleges	170	na
- Provide Rental and Small Landlord Support	30	na
- Provide Support to Childcare Providers	25	na
Infrastructure Investment and Jobs Act (enacted on November 15)	**550**	na

Source: Joint Committee on Taxation, Tax Foundation, BEA, and The Committee for a Responsible Federal Budget (CRFB) calculations.

The myriad Federal policy responses to the pandemic drove the Federal budget deficit up 218.0 percent in Federal Fiscal Year (FFY) 2020 to $3.1 trillion, its highest level in history. The deficit fell only slightly to $2.8 trillion in FFY 2021. According to the CBO, the level of Federal debt held by the public rose above $20 trillion in FFY 2021, reaching 102.7 percent of GDP, and is projected to remain at about 100 percent of GDP over the next decade.

Outlook

Real Federal government spending fell 5.1 percent at an annual rate in the third quarter of 2021, following an annualized decline of 5.3 percent in the second quarter and strong growth of 11.3 percent in the first quarter. Real state and local government spending grew 4.9 percent at an annual rate in the third quarter of 2021, following near flat growth in the first half of the year. Real government spending growth is expected to turn positive in the first half of 2022 due to additional Federal stimulus for 2022.

The unwinding effect of the pandemic stimulus is evident in the deceleration of real Federal government spending growth from 5.0 percent in 2020 to an estimated 0.8 percent in 2021. Real Federal government spending is expected to decline 1.1 percent in 2022, followed by growth of 0.2 percent in 2023. Assuming the $550 billion infrastructure bill takes effect as early as 2022, real state and local government spending growth is expected to ramp up from 0.4 percent in 2021 to 2.6 percent in 2022 and 2.1 percent in 2023.

Risks

From a longer-term perspective, the elevated Federal budget deficit and mounting debt burden shown in the figures above could result in increases in long-term interest rates and raise inflation expectations, leading to higher inflation and depressing U.S. economic growth.

Trade

Key Points

- As pent-up demand from U.S. consumers roared back through 2021, production in the rest of the world struggled to keep pace while grappling with labor shortages, pandemic-induced closures, and supply shortages. Delays and shortages have resulted in rapid price increases and widespread congestion at major West Coast ports.

- In the third quarter of 2021, real import growth slowed, while real exports declined 5.3 percent. The recovery in imports continues to outpace exports, reflecting robust growth in domestic demand while foreign demand continues to lag.

- Imports of travel services rose rapidly in the third quarter of 2021 as other countries started to ease restrictions on American tourists. While U.S. exports of travel services should eventually get a boost from the easing of restrictions on international visitors in early November, the rapid spread of the Omicron variant could hinder such travel in the near-term.

- Although most travel restrictions have been lifted, the recovery in international trade in services continues to lag trade in goods as service sector demand remains tepid. As of the third quarter of 2021, real goods imports were 9.4 percent above their fourth-quarter 2019 level, while real imports of services were 10.0 percent below.

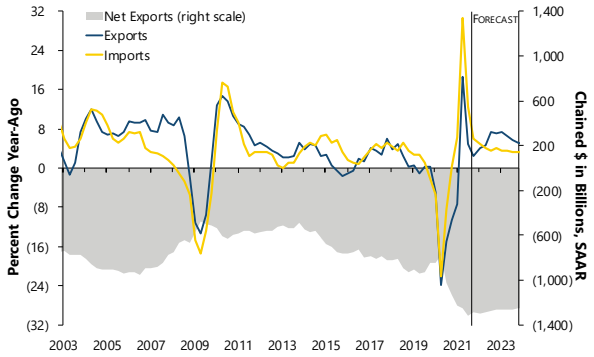
- Similarly, real goods exports were 4.6 percent below their fourth-quarter 2019 level, while real services exports were fully 22.5 percent below.

- The U.S. dollar stabilized in 2021 after a rapid depreciation from its pandemic peak in 2020 and has more recently been on the rise. Whether the dollar continues to gain strength depends on the outlook for U.S. economic growth and monetary policy relative to that of the nation's trading partners.

- U.S. exports depend heavily on the performance of foreign economies and their demand for U.S. goods and services. The IMF projects real growth in global GDP will decelerate from 5.9 percent in 2021 to 4.9 percent in 2022, with persistent output losses expected for the developing world as they continue to lag in vaccine distribution and fiscal policy support.[12]

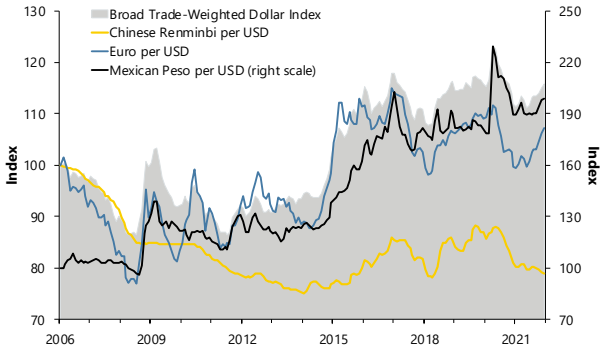
[12] International Monetary Fund, *World Economic Outlook*, October 2021, https://www.imf.org/en/publications/weo.

U.S. Exports, Imports, and Net Exports



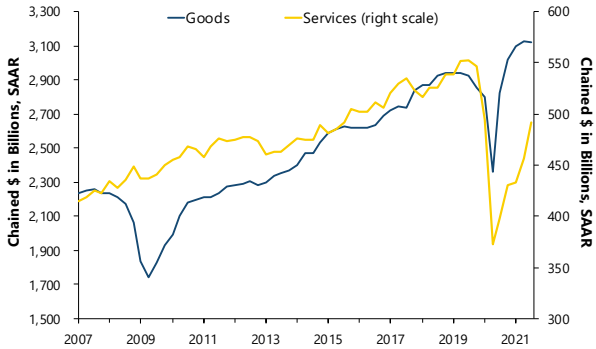
Source: Haver Analytics/BEA; DOB staff estimates.

U.S. Dollar Movements



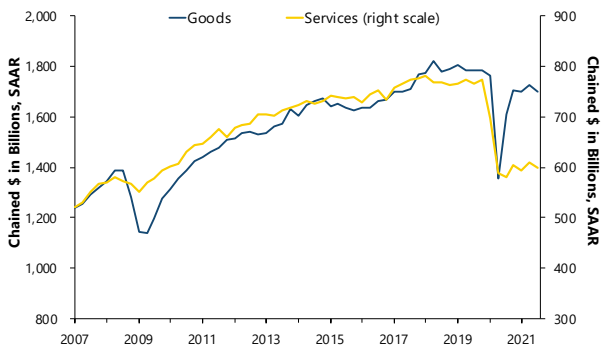
Note: Index January 2006=100.
Source: Haver Analytics/FRB.

Real Import of Goods and Services



Source: Haver Analytics/BEA

Real Export of Goods and Services



Source: Haver Analytics/BEA

Recent Developments

Real imports continued to climb in 2021, albeit at a decelerating pace, growing 4.7 percent in the third quarter of 2021, following 7.1 percent in the second quarter and 9.3 percent in the first. However, real exports have fallen behind in 2021, declining 5.3 percent at an annual rate in the third quarter of 2021 after rising 7.6 percent in the second quarter. On balance, real net exports of goods and services continued to post record lows, marking $1.3 trillion in the third quarter of 2021, and subtracting 1.3 percentage points from real GDP growth in the quarter.

As global consumer demand nose-dived in the wake of the pandemic in early 2020, goods-producers cut back on production. When consumption began to rebound in advanced countries that were able to offer fiscal support and contain the virus, imbalances in supply-chain logistics began to emerge as consumer preferences shifted away from high-contact services toward goods. Factory output started to rebound in the first half of 2021, but shipping container shortages, as well as pandemic-related factory closures, resulted in cascading supply shortages and production delays for goods. Labor was also in short supply as ports and factories struggled to find workers to process orders and shipments to consumers.

Global supply-chain disruptions, particularly within developing countries grappling with the pandemic, continue to weigh on the global recovery in trade. As of the third quarter of 2021, real U.S. exports of goods and services were still down 11.0 percent relative to the fourth quarter of 2019 while real imports were up 5.5 percent, fueled by strong domestic consumption growth. Despite the tailwind of a weak dollar, exports have continued to stall over the course of 2021 due to the lack of foreign consumption. As a result, the U.S. trade deficit has widened by $469.0 billion, or 55.3 percent since the beginning of the pandemic.

Outlook

The COVID-19 pandemic remains a key factor affecting the global economic outlook, as well as the shape and pace of the recovery in global trade. Real U.S. exports are projected to grow 5.8 percent on an annual basis in 2022, following estimated growth of 4.0 percent in 2021. Factors expected to support the acceleration of U.S. export growth include the further easing of global travel restrictions, which in turn is expected to fuel further growth in both aircraft exports, and exports of travel services. With the fiscal boost to domestic demand in the rear-view mirror, real U.S. imports growth is expected to slow to 4.2 percent in 2022, following an estimated 13.1 percent in 2021. On balance, real net exports are expected to improve in 2022. Real exports are expected to return to their pre-pandemic level by early 2023, while real imports growth is expected to moderate and rebalance, reversing some of the recent shifting toward goods and offering some relief for congested ports.

The value of the U.S. dollar is rapidly approaching its pre-pandemic level after falling from its April 2020 peak. The nominal broad trade-weighted dollar index was up 3.5 percent on a year-ago basis in December 2021. As the Federal Reserve continues to taper asset purchases and begins raising interest rates later in the year, the dollar is likely to strengthen further. A strengthening dollar would normally put downward pressure on U.S. exports and strengthen imports, but with supply chains stretched thin and global demand for U.S. goods and services lacking, exports may be less sensitive to currency fluctuations than normally.

Risks

The darkest cloud over U.S. trade remains the pandemic and the supply-chain constraints that have characterized the global economy's recovery. As COVID-19 remains prevalent across the developing world, surges of the virus and resultant closures of facilities will continue to disrupt supply chains. A slower return of the U.S. labor force in the transportation and warehousing sector could also slow the decongestion of U.S. ports and impede growth in imports and exports relative to the forecast. On the upside, a more expedient distribution and rollout of COVID-19 vaccines and therapeutics across the developing world would decrease the risks associated with the virus and ease the disruptions it has caused.

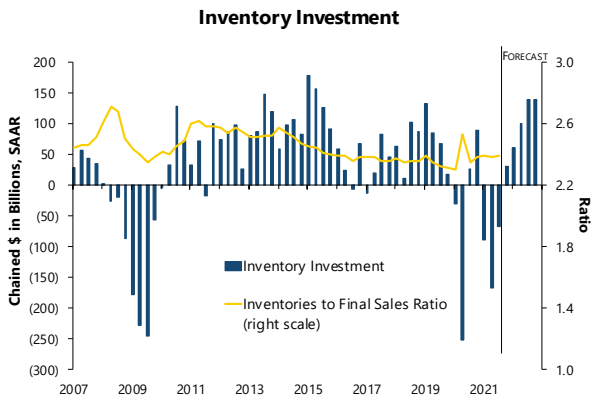
Inventory Investment

Key Points

- With supply and labor shortages limiting production of goods, firms had to deplete their inventories to meet the demand. The real change in private inventories was negative in each of the first three quarters of 2021, with the largest decline of $168.5 billion (annualized) posted for the second quarter.

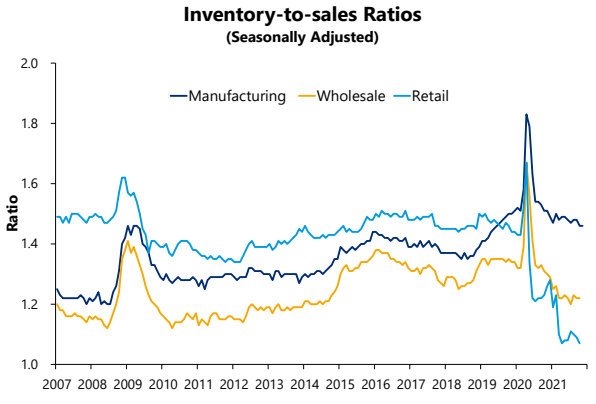
- Real inventory investment deducted 2.6 percentage points from real GDP growth in the first quarter of 2021, and 1.3 percentage points in the second quarter. But it contributed 2.2 percentage points to real GDP growth in the third quarter as the pace of inventory drawdown slowed.

- The dynamics of the pandemic and the differential impact of supply-chain disruptions on industries have resulted in divergent inventory patterns by sector. Auto inventories experienced the biggest hit in 2021. Real inventory investment is projected to rebound to an average of $110.0 billion in 2022 after an estimated decline of $75.0 billion in 2021.

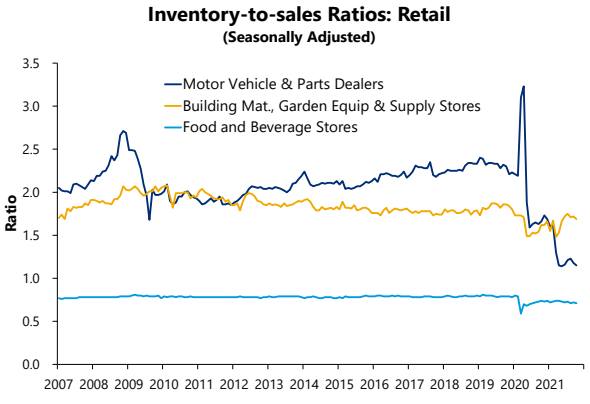


Source: Haver Analytics/BEA; DOB staff estimates.

Source: Haver Analytics/FRB.



Source: Haver Analytics/Census.



Source: Haver Analytics/Census.

Recent Developments

The stock of inventories fell sharply in 2021, after having recovered somewhat in the second half of 2020 when industrial production resumed from the initial shock of the pandemic. While the plunge in inventory investment in the second quarter of 2020 was mainly driven by surging consumer demand for goods, the drop in inventory investment in 2021 was more a result of severe supply constraints. The pace of real inventory declines slowed in the third quarter of 2021. Real inventory investment rose from an annualized decline of $168.5 billion in the second quarter to a decline of $66.8 billion in the third quarter. With resurging COVID cases, fading Federal stimulus, and worsening shortages taking a toll on final sales in the third quarter of 2021, real inventory investment became the primary source of growth during the quarter, adding 2.2 percentage points to overall real GDP growth. Accordingly, the inventory-to-sales ratio tipped up.

Supply-chain disruptions have been widespread since the fall of 2020 and worsened in 2021. As a result, inventory-to-sales ratios across the manufacturing, wholesale trade, and retail trade sectors stayed below their pre-pandemic levels in 2021. However, the differential impact on industries resulted in divergent paths for inventory recovery by sector. Retail inventories plunged the most compared to retail sales, resulting in an all-time record low inventory-to-sales ratio in the retail sector. Motor vehicles and parts dealers experienced the most significant depletion of inventories within the retail sector. This phenomenon was partially due to strong auto demand as consumers tried to avoid public transportation, but perhaps more importantly, from shortages of automotive microchips used in vehicle assemblies.

Outlook

October inventory data came out strong, but supply constraints are not expected to ease until 2022, so real inventory investment is estimated to have a small increase in the fourth quarter of 2021, resulting in an estimated $75.0 billion decline on average in 2021. As supply constraints ease during 2022, businesses are expected to start restocking inventories. This process will be aided by a shift in consumption from goods to services, giving rise to an increase in real inventory investment that is projected to average $110.0 billion for 2022.

Risks

If supply-chain disruptions were to endure longer than expected, inventory drawdowns would extend beyond 2021 and thus restrain real GDP growth further in the medium term. If the pandemic were to cause another wave of depressed consumer demand, a greater degree of involuntary inventory accumulation would become a risk.

Corporate Profits

Key Points

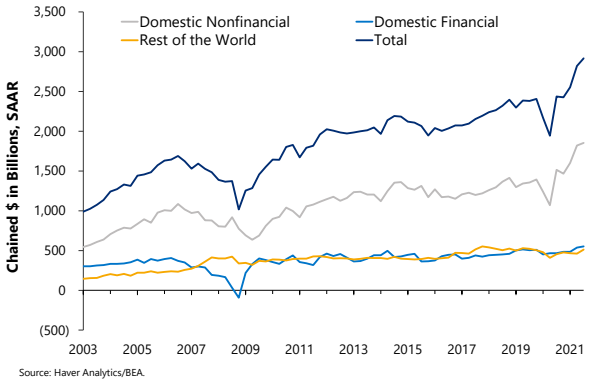
- U.S. corporate profits from current production recovered immediately following a steep decline in the second quarter of 2020 when the pandemic hit. Corporate profits continued to climb through 2021. By the third quarter of 2021, U.S. corporate profits were $511.0 billion (21.2 percent) above the pre-pandemic peak.

- U.S. corporate profits from domestic firms grew rapidly in the first half of 2021 due to continued fiscal support through the CARES Act and the American Rescue Plan. This support came in the form of forgivable Federal loans and grants that reduced overhead costs for firms, as well as the release of pent-up consumer demand. However, U.S. corporate profits from the rest of the world just barely surpassed their pre-pandemic level by $7.1 billion (1.4 percent) in the third quarter of 2021, as other countries were facing slower vaccine rollouts, resurgences of the virus, delayed recoveries, and weaker consumer demand.

- Although initially hit hard by the pandemic, domestic nonfinancial corporate profits have soared since their trough in the second quarter of 2020, growing 33.1 percent between the fourth quarter of 2019 and the third quarter of 2021, and 26.3 percent since the end of 2020. Although financial firms saw less of a slump in profits, they have been slower to regain their footing. Domestic financial corporate profits did not return to their pre-pandemic peak until the second quarter of 2021 and were only 8.6 percent above the pre-pandemic level as of the third quarter.

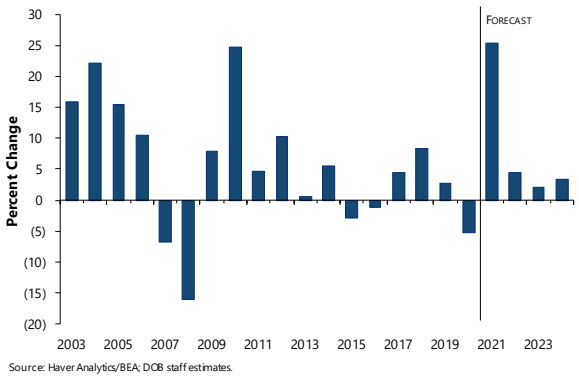
- Future growth in corporate profits is constrained by rapid wage increases due to sustained labor shortages and input price inflation due to supply-chain disruptions. These increased costs will be partially passed onto consumers and the rest absorbed by corporate profits.

U.S. Corporate Profits



Source: Haver Analytics/BEA.

U.S. Corporate Profits Growth



Source: Haver Analytics/BEA; DOB staff estimates.

Outlook

Corporate profits growth is expected to slow down significantly in 2022 due to the majority of the fiscal stimulus expiring toward the end of 2021, the cost of production increasing amid labor and supply shortages, and consumption weakening. Growth in U.S. corporate profits from current production — including inventory valuation and capital consumption adjustments — is estimated to moderate from 25.4 percent in 2021 to 4.4 percent in 2022 and 2.1 percent in 2023.

Risks

Should wages continue rising and inflation of intermediate goods prove more persistent than expected, corporate profits would be further dampened by higher costs of production. If new COVID-19 variants emerge that prove to be more severe than Omicron were to cause a new wave of widespread factory shutdowns and restrain consumer activity, corporate profits could be hit hard again.

On the positive side, if the Federal government were to implement programs to support businesses further, corporate profits could grow faster. Alternatively, a more robust global economic recovery than anticipated could result in stronger U.S. corporate profits as well.

Comparison with Other Forecasters

DOB's U.S. Macro forecast for the FY 2023 Executive Budget was completed in early December of 2021, incorporating the second estimate of 2021 third quarter real GDP, October personal income and outlays, the first estimate of November 2021 employment, and the October 2021 CPI report.[13]

The following table compares DOB's forecast for a selection of U.S. indicators with those of other forecasters released in January 2022 when more up-to-date data were available and Omicron's impact became more evident. The 2022 forecasts for real U.S. GDP growth fell into a range from 3.9 percent to 4.3 percent, with DOB's forecast being the highest. DOB's projection for CPI growth in 2022 is at 4.1 percent, the lowest among a forecast range from 4.1 percent to 4.8 percent. DOB and the Blue Chip Consensus both forecast the unemployment rate to be 3.8 percent in 2022. For 2023, all forecasters project both slower real U.S. GDP growth and a lower unemployment rate as the economy continues to recover from the pandemic. Moreover, all forecasters expect consumer price inflation to drop to a little over 2 percent in 2023 from above 4 percent in 2022. DOB's 2023 outlook falls in the middle of the forecast range for all three indicators summarized in the following table.

U.S. ECONOMIC FORECAST COMPARISON

	2021	2022	2023
Real Gross Domestic Product (GDP) (chained percent change)			
DOB	5.6	4.3	2.7
Blue Chip Consensus	NA	3.9	2.6
IHS Markit	5.7	4.1	2.5
Moody's Analytics	5.7	4.1	3.1
Consumer Price Index (CPI) (percent change)			
DOB	4.6	4.1	2.3
Blue Chip Consensus	NA	4.6	2.4
IHS Markit	4.7	4.2	2.2
Moody's Analytics	4.7	4.8	2.1
Unemployment Rate (percent of the labor force)			
DOB	5.4	3.8	3.5
Blue Chip Consensus	NA	3.8	3.5
IHS Markit	5.4	3.7	3.6
Moody's Analytics	5.4	3.6	3.4

Source: NYS DOB, December 2021; Blue Chip Economic Indicators, January 2022; IHS Markit, January 2022; and Moody's Analytics, January 2022.

[13] For a detailed description of the DOB/US model methodology, see New York State Economic, Revenue, and Spending Methodologies (https://www.budget.ny.gov/pubs/archive/fy22/fy22-methodology-report.pdf).

Risks to the U.S. Macro Forecast

The predominant risk to the national economy for 2022 is far and away from the evolution of the COVID-19 pandemic. With the Omicron variant now known to be the most contagious variant to date, public health officials are struggling to balance the risk of spread against the risks to the social fabric – including the economy – if infected but asymptomatic workers are quarantined at home for prolonged periods. If mitigation efforts are less successful than expected, real U.S. GDP growth could be far less than reflected in this forecast. Moreover, if those workers who currently remain on the sidelines of this recovery further delay their reentry into the workforce, both economic growth and employment growth, particularly within the services sectors, could be lower than anticipated. Lower employment growth could result in both higher wage growth and higher inflation than projected.

Higher inflation than reflected in this forecast could also ensue if either global supply chain bottlenecks or those factors restraining energy production are not resolved as quickly as anticipated. Higher inflation would increase the risk that medium- and longer-term inflation expectations could rise above forecast, raising the risk that the Federal Reserve could move to tighten earlier than expected. Such a move could result in higher interest rates and slower growth than implied by this forecast.

In contrast, an earlier halt to the spread of Omicron than expected, not just in the U.S. but worldwide, could result in faster growth at home, while a quicker resolution of supply chain instability both here and abroad could contribute to stronger growth and lower inflation than expected. Finally, gridlock in the nation's capital appears to be hampering the passage of additional major spending bills, but if the current impasse should unwind more quickly than expected, expansionary fiscal policy could fuel stronger growth than reflected in this forecast, though potentially at the cost of higher inflation. This possibility could compound the challenges already facing the central bank in these historically difficult times.

The New York State Economy

Since the height of the pandemic, the New York State economy has recovered significant ground, regaining 62.6 percent of the private sector jobs lost in March and April 2020 as of November 2021. However, this compares to an 86.6 percent rebound for the nation. Indeed, New York's labor market recovery has lagged that of the nation since its inception in May 2020. Although the State economy is highly diverse, two of its largest sectors — retail trade and leisure and hospitality — have been the two most affected by the pandemic. While nationally, these two sectors were down 1.1 percent and 7.9 percent below their February 2020 levels, respectively, for New York, these sectors were down 7.8 percent and 23.9 percent. Those two sectors combined accounted for fully 22.5 percent of the State's private sector workforce as of February 2020, but that share had fallen to 20.7 percent by November 2021. Moreover, these high-contact service industries are more sensitive to new virus variant waves, particularly in cold-weather states like New York.

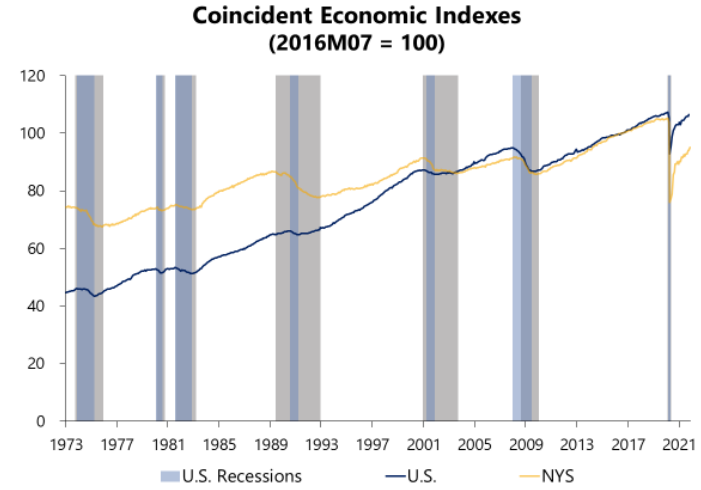
The pandemic has affected other industries differentially as well. The State's financial services industry is still down 5.6 percent as of November 2021 from February 2020, compared with 0.4 percent growth nationwide. Similarly, New York's professional and business services jobs are down 4.4 percent as of November, compared with only a 0.4 percent decline for the nation. Making matters worse, both of these high-wage, high-skill, and information-intensive sectors have adapted to remote work in relatively large numbers. It is estimated that more than half of the commuters to New York City could work remotely, representing half a million jobs.[14] The businesses that rely heavily on commuter traffic, such as leisure and hospitality, transportation, and administrative and support services, have tended to experience the greatest losses in real output. While real U.S. GDP succeeded in surpassing its fourth quarter of 2021 pre-pandemic level in the first quarter of 2021, real New York State GDP surpassed its peak two quarters later.

Consequently, it is no surprise that New York's 6.6 percent November 2021 unemployment rate exceeds that of the nation by 2.4 percentage points. But the statewide statistics mask a tale of two, and arguably even three, states. New York City posted an unemployment rate of 9.0 percent for November, compared with 4.7 percent for the downstate suburban counties (Nassau, Suffolk, and Westchester) and 4.8 percent for the remainder of the State.[15] As of November 2021, the Upstate labor force was only 1.9 percent below its February 2020 level, compared to the national decline of 1.5 percent. However, the downstate suburban counties were down 3.4 percent overall, while the New York City labor force was down 2.4 percent.

Although the pandemic led to double-digit declines in employment in FY 2021, State wages fell a mere 2.0 percent, as the steepest job losses were concentrated in low-wage sectors such as leisure and hospitality, retail trade, and transportation, where remote work is not possible. The disparity between employment and wage growth rates was partly due to strong FY 2021 bonus growth thanks to highly expansionary monetary and fiscal policy, leading to a sterling stock market performance and strong financial sector revenues. Despite declines in employment and wages,

[14] New York City Comptroller, "The Impact Of Hybrid Work On Commuters And NYC Sales Tax." October 2021. https://comptroller.nyc.gov/reports/the-impact-of-hybrid-work-on-commuters-and-nyc-sales-tax/#_ftn5.
[15] New York City's economy is further discussed in "New York City's Lagging Recovery" section below.

State personal income enjoyed 8.5 percent growth in FY 2021 due to unprecedented fiscal stimulus payments to small businesses and individuals. With fiscal stimulus on the wane and rate hikes now expected to begin even sooner, only modest growth of 1.0 percent and 1.1 percent are estimated for State personal income for FY 2022 and FY 2023, respectively, despite a strong continuing recovery in employment.



Note: NYS recession dates are DOB staff estimates.
Source: Moody's Analytics/Conference Board; National Bureau of Economic Research (NBER); DOB staff estimates.

The State's lagging recovery is evident in the chart above, which depicts the U.S. and New York Coincident Economic Indexes. As a magnet for international tourist and business travelers, New York City was hit particularly hard during the pandemic, reducing economic activity for the entire downstate region. Following a 26.6 percent record decline between February and April of 2020, New York's index turned upward, rising 24.9 percent between April 2020 and November 2021, though it remains 9.7 percent below its pre-pandemic high. Thus, the State's deepest recession since the 1930s was also the shortest. In comparison, the U.S. index fell only 13.6 percent during the same two months and had almost fully recovered by November 2021. The reasons for New York's lagging recovery are discussed in detail below.

Labor Markets

Key Points

- Though the New York State labor market has made significant progress since the depth of the COVID-19 pandemic, it had only recovered 60.4 percent of the jobs lost in March and April 2020 as of November 2021. This compares to a much stronger recovery of 83.1 percent for the nation.

- The State's economic rebound has exhibited wide regional disparity. As a magnet for international tourist and business travelers, New York City was hit particularly hard during the pandemic, having been its epicenter in the early phase. As a result, the City has taken longer to recover than much of the country, a major concern since New York City is the growth engine for the nation's largest metropolitan area.

- As of November 2021, New York City had recovered only 53.6 percent of its pandemic-related jobs losses. In contrast, the rest of Downstate New York had recovered 65.3 percent of its pandemic-related jobs losses as of November, while Upstate had recovered 68.1 percent.

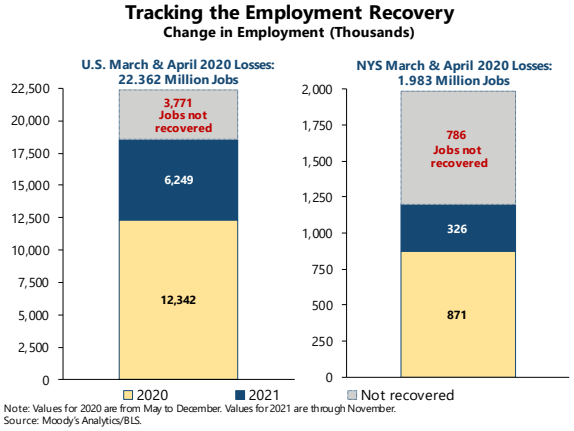
- The industries that have been the slowest to come back are also the State's lowest-wage industries: leisure and hospitality, still down 23.9 percent as of November 2021 compared to February 2020, and the other services sector — including repair and maintenance, personal care and laundry services, and domestic services — is down 15.6 percent. These low-wage but high-contact service industries have been the most at risk during the pandemic. In addition, New York substantially lags the nation's employment recovery in real estate and rental and leasing; professional, scientific, and technical services; and the finance and insurance sectors, due largely to their importance in New York City.

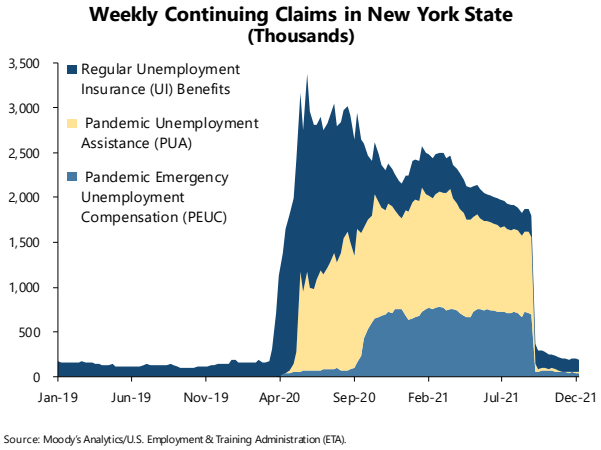
- At 6.6 percent as of November 2021, New York had the fourth-highest unemployment rate in the nation in November 2021, behind California, Nevada, and New Jersey. The statewide unemployment rate for November was pulled down by New York City, which posted a rate of 9.0 percent, while the rest of the State came in at 4.8 percent, only 0.6 percentage point above the national rate. In November 2021, the State labor force was 2.4 percent below its February 2020 level and is not expected to surpass that level at any point over the forecast horizon.

- The outlook for the State labor market remains favorable for 2022, despite the arrival of the Omicron variant. Total New York State employment is projected to grow 5.6 percent in 2022, with private sector jobs growing 6.3 percent. State employment is projected to surpass its pre-pandemic level in 2024, representing a significant lag compared to the nation.

Recent Developments

The State labor market continued to make progress in 2021, gaining 326,000 jobs during the first 11 months of the year, based on the most recent Current Employment Statistics (CES) data, the timeliest data available. However, economic headwinds stemming from the Delta variant, a reluctance among many workers to return to the office, or to re-enter the workforce at all, have slowed the pace of the recovery. Despite these ongoing challenges, the unemployment rate managed to decline to 6.6 percent in November 2021, from 8.7 percent in December 2020.





The right-hand bar in the above-left figure shows that as of November 2021, New York State had recovered 1,197,000 of its 1,983,000 pandemic-related jobs losses: 871,000 jobs recovered from May 2020 to December 2020, plus 326,000 jobs recovered over the first 11 months of 2021. Nevertheless, State employment was 786,000, or 8.0 percent, below its pre-pandemic February 2020 level in November as the downstate economy continued to struggle. New York City employment was 9.4 percent below peak, the downstate suburbs 7.9 percent below, while the remainder of Upstate was 5.6 percent below.

The left-hand bar in the figure shows that the United States has recovered 18,591,000 of its 22,362,000 pandemic-related jobs losses: 12,342,000 jobs recovered from May 2020 to December 2020, plus 6,249,000 jobs recovered over the first 11 months of 2021. Indeed, as of November 2021, U.S. employment was only 2.5 percent below its pre-pandemic level in February 2020, well ahead of the State jobs recovery for the same period.

During the darkest days of the pandemic, unemployment insurance (UI) benefits and other Federal supplementary programs were essential in alleviating the unparalleled labor market disruption. In addition to the regular UI benefits program, the Federal government provided three forms of supplemental coverage to eligible unemployed workers: the Pandemic Emergency Unemployment Compensation (PEUC) program, which extended the duration of regular UI benefits; the Federal Pandemic Unemployment Compensation (FPUC) program, which offered enhanced payment amounts; and the Pandemic Unemployment Assistance (PUA) program, which provided new

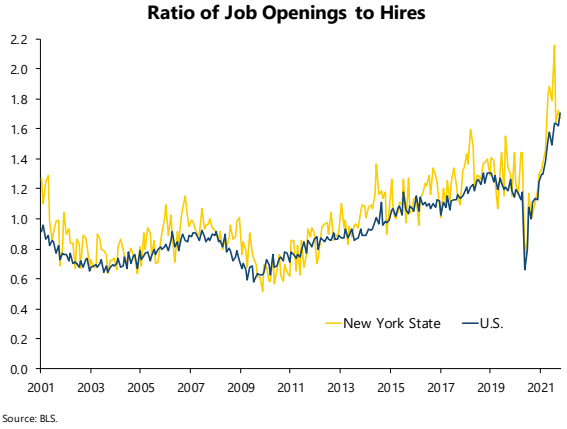
coverage to small business owners, gig workers, and other unemployed workers not typically eligible for UI benefits.

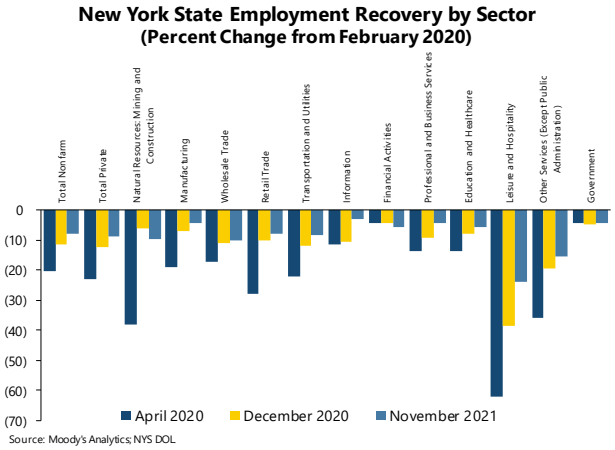
After gradually falling from their peak in the week of May 30, 2020, continuing UI claims fell precipitously as the PUA and PEUC programs expired on September 5, 2021, affecting 1,415,000 beneficiaries. For the week ending December 4, 2021, the regular UI benefits program served 145,000 continuing claimants, while the expired Federal supplemental programs still posted over 52,000 claimants (5,000 claims under PUA and 47,000 under PEUC) who were owed benefits for prior periods.

Despite the expiration of the supplemental Federal UI programs, the New York State labor market was tight through the end of 2021. The job-openings-to-hires ratio is a common measure of labor market tightness, where the larger the ratio, the tighter the labor market. Before the pandemic, the State had averaged 1.11 job-openings-to-hires from January 2011 to February 2020. By July 2021, the job-openings-to-hires ratio had risen to 2.1 job-openings-to-hires. This surge has coincided with a near-record number of quits and moderately low layoffs. The ratio has declined since then but remained elevated at 1.6 in October 2021.

As for the nation, the reasons behind the tight labor market are only partially understood. School closings left many parents little choice but to exit the workforce in order to supervise their young children's education. A wave of early retirements is also thought to have been driven by the pandemic, supported in part by strong 401k performance. Anecdotally, workers appear to be reassessing their work-life balance and career aspirations, including their desire for permanent remote work, hybrid options, and even self-employment.

Yet another factor potentially restraining workforce participation has been the rise in the national saving rate during the pandemic, particularly during those months corresponding to the distribution of Federal economic impact payments. These data suggest that many households were able to accumulate savings at historically high rates. In the second and fourth quarters of 2020, the net worth of households and nonprofit organizations grew at annualized rates of 32.2 percent and 28.7 percent, the highest in the history of the series. With the personal saving rate on a downward trajectory since the passage of the American Rescue Plan in March 2021, some workers not currently employed, having exhausted these excess savings, will choose to re-enter the workforce. Indeed, at 6.9 percent in November 2021, personal saving as a percentage of disposable income posted its lowest rate since the end of 2017.





The above graph portrays the evolution of the State labor market by industrial sector by presenting the percent change in employment levels from their February 2020 pre-pandemic peak to three reference points: the April 2020 labor market trough, December 2020, and November 2021, the most recent data available. This graph reveals that none of the State's major economic sectors had fully recovered their pandemic-related jobs losses as of November 2021.[16]

The industries that have been the slowest to come back are also among the State's lowest-wage industries: leisure and hospitality, still down 23.9 percent as of November 2021 compared to February 2020, and the other services sector that includes repair and maintenance, personal care and laundry services, and domestic services, which is down 15.6 percent. Combined, these industries represent a shortfall of 296,000 jobs, or 37.7 percent of the State's unrecovered losses as of November 2021. These low-wage but high-contact service industries have been the most at risk during the pandemic and are not expected to surpass their pre-pandemic employment levels at any point over the forecast horizon, despite combined strong growth of 20.2 percent for 2022, following estimated growth of 8.9 percent for 2021.

[16] Natural Resources and Mining in isolation did exceed its February 2020 peak in August 2021 but due to its small size — 5,500 workers as of November 2021 — it is here combined with Construction.

EMPLOYMENT GROWTH - FIRST HALF OF 2021 (Percent Change Year-Ago)	NYS	US
Total Private	**0.4**	**1.6**
Utilities	(3.4)	(0.9)
Construction	5.6	2.2
Manufacturing and Mining	0.3	0.4
Wholesale Trade	(2.8)	(0.7)
Retail Trade	3.2	3.8
Transportation and Warehousing	4.7	3.1
Information	(1.1)	(2.3)
Finance and Insurance	(2.1)	0.8
Real Estate and Rental and Leasing	(3.2)	0.2
Professional, Scientific, and Technical Services	(1.8)	2.4
Management, Administrative, and Support Services	(0.1)	1.6
Educational Services	(2.8)	(2.0)
Healthcare and Social Assistance	1.0	0.7
Leisure, Hospitality, and Other Services	(2.1)	3.5
Government	**(2.9)**	**(2.5)**
Total	**(0.1)**	**1.0**

Note: Management, administrative, and support services includes NAICS sectors 55 and 56; sum of sectors may vary from the total due to the exclusion of unclassified.
Source: NYS DOL; Moody's Analytics.

Though New York's labor market recovery has made significant progress, it has continued to lag that of the nation. The table above compares employment gains by economic sector using non-seasonally adjusted Quarterly Census of Employment and Wages (QCEW) data, the most accurate data available, though less timely than the CES data cited earlier. It is no surprise that the disparity between New York and the nation is the widest within the combined leisure and hospitality, and other services sector. The unique features of New York City as both the center of gravity for the largest commuting district in the country, as well as a global tourism magnet, have made the State especially vulnerable to the vagaries of the pandemic.[17]

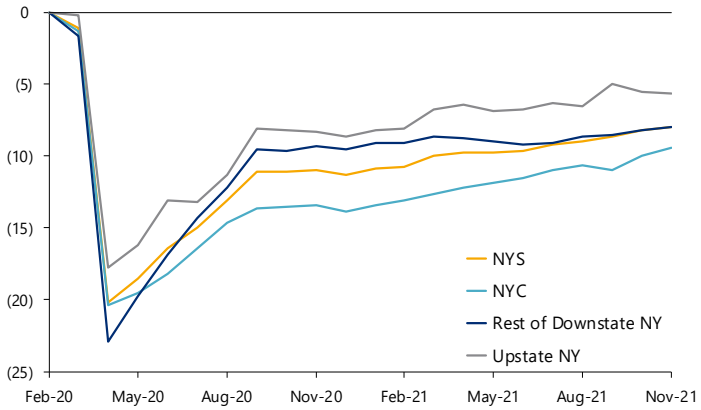
Additional areas of particular importance where New York is substantially lagging the nation are real estate and rental and leasing; professional, scientific, and technical services; and the finance and insurance sector. New York continued to lose jobs in all three of these areas in the first half of 2021, while the nation saw significant gains. In contrast, New York outperformed the nation in construction, transportation and warehousing, and healthcare and social assistance, all areas where New York experienced steep declines as a result of the pandemic.

[17] See the "New York City's Lagging Recovery" section for more details.

At 6.6 percent as of November 2021, New York had the fourth-highest unemployment rate, behind California, Nevada, and New Jersey. As of November 2021, the national unemployment rate had fallen to 4.2 percent. However, The State's economic rebound has exhibited wide regional disparity. As a magnet for international tourist and business travelers, New York City was hit particularly hard during the pandemic, having been its epicenter in the early phase. On March 14th 2020, the City economy was almost totally shut down in order to contain the spread of the virus, with only those workers either deemed essential or able to work remotely at their jobs.

As of November 2021, New York City had recovered only 53.6 percent of its pandemic-related jobs losses. The rest of Downstate New York had recovered 65.3 percent of its pandemic-related jobs losses as of November, while Upstate had recovered 68.1 percent, though the Upstate labor market has stagnated in recent months.[18] Correspondingly, at 9.0 percent, New York City's unemployment rate continued to lag that of the remainder of the State, which posted a 4.8 percent unemployment rate in November 2021. Nevertheless, the State labor market remains remarkably tight, despite only having regained 60.4 percent of the jobs lost to the pandemic in March and April 2020. As of November 2021, the State labor force was 2.4 percent below its February 2019 level, and is not expected to surpass that at any point over the forecast horizon.

Tracking Employment Recovery
(Percent Change from February 2020, Seasonally Adjusted)

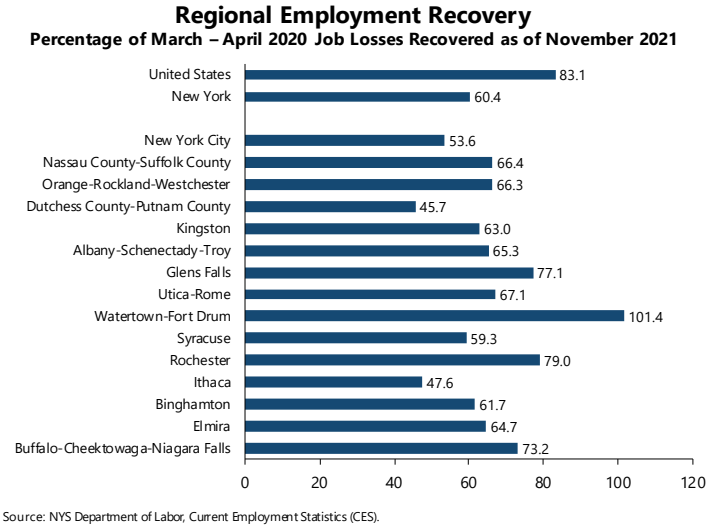


Source: Moody's Analytics and NYS DOL

Since the start of the economic recovery from the pandemic in May 2020, the New York City labor market has lagged behind the State. The above graph compares the employment recovery of New York State, New York City, the rest of Downstate New York, and Upstate New York. As shown, the rest of Downstate was the hardest hit at the onset of the pandemic, with an employment decline of 22.9 percent as of April 2020, compared to its pre-pandemic level in February 2020. However, the region experienced a relatively rapid rate of jobs recovery, and by June 2020, its employment losses were eclipsed by New York City. Since then, the New York City jobs recovery has trailed the other regions.

[18] In this context, Downstate is defined as the counties that comprise the MTA region, which in addition to New York City and Long Island includes Dutchess, Orange, Putnam, Rockland, and Westchester counties.

The chart below shows the employment recovery for select New York State metropolitan statistical areas (MSAs). The Watertown-Fort Drum MSA has experienced a relatively strong employment recovery, with over 100 percent of its jobs recovered as of November 2021. In contrast, the Ithaca MSA and the much larger Dutchess County-Putnam County MSA have experienced the weakest recoveries, with only 47.6 percent and 45.7 percent of their jobs recovered as of November 2021. The two largest upstate MSAs, Buffalo-Cheektowaga-Niagara Falls and Rochester, have recovered 73.2 percent and 79.0 percent of their pandemic-related jobs losses, respectively, as of November 2021.



Source: NYS Department of Labor, Current Employment Statistics (CES).

Outlook

The New York State labor market outlook remains favorable for 2022, as the overall economy looks to return to its pre-pandemic norms. The easing of COVID-related restrictions, including international travel, as well as the expiration of Federal supplemental unemployment programs, are all anticipated to help propel the jobs recovery in the coming year. Yet, a complete jobs recovery remains at a distance, as the State employment level is not projected to reach its pre-pandemic level until 2024.

The table below shows the projected changes in State employment by economic sector in 2021 and 2022. In total, employment in New York State is estimated to increase by 2.5 percent in 2021, amounting to 216,000 recovered jobs. The outlook for 2022 is even more encouraging, with employment in the State projected to increase by 5.6 percent, representing an additional 490,000 jobs. At this pace, the State is projected to reach its pre-pandemic February 2020 peak by 2024.

CHANGE IN NEW YORK STATE EMPLOYMENT				
	2021		2022	
	Percent	Levels	Percent	Levels
Total Private	**3.2**	**228**	**6.3**	**464**
Utilities	(2.8)	(1)	0.8	0
Construction	4.0	14	3.9	15
Manufacturing and Mining	1.8	7	4.3	18
Wholesale Trade	(0.5)	(2)	5.4	16
Retail Trade	3.3	26	5.2	43
Transportation and Warehousing	7.3	17	3.7	9
Information	3.0	8	2.6	7
Finance and Insurance	(1.3)	(7)	1.2	6
Real Estate and Rental and Leasing	(1.5)	(3)	4.5	8
Professional, Scientific, and Technical Services	0.3	2	3.4	22
Management, Administrative, and Support Services	4.6	27	5.6	34
Educational Services	0.7	2	6.4	21
Healthcare & Social Assistance	2.4	37	3.6	57
Leisure, Hospitality and Other Services	8.9	84	20.2	207
Government	**(0.9)**	**(12)**	**1.9**	**26**
Total	**2.5**	**216**	**5.6**	**490**

Note: Management, administrative, and support services includes NAICS sectors 55 and 56; sum of sectors may vary from the total due to the exclusion of unclassified.
Source: NYS DOL; Moody's Analytics; DOB staff estimates.

This robust job recovery outlook for New York State is anticipated to be led by gains in the leisure, hospitality, and other services sector. The employment level in this combined sector is expected to increase by 8.9 percent in 2021, amounting to 84,000 recovered jobs. Moreover, as tourism rebounds more fully and patrons continue to return to traditional arts and entertainment venues — especially in New York City — employment in the leisure, hospitality, and other services sector is projected to increase by 20.2 percent in 2022, representing an additional 207,000 recovered jobs.

The healthcare and social assistance sector is also projected to experience significant jobs gains in 2021 and 2022. The employment level in the healthcare and social assistance sector is projected to increase by 2.4 percent in 2021 and 3.6 percent in 2022, amounting to a total of 94,000 jobs. At this pace, the sector is expected to surpass its pre-pandemic employment level by 2023. Recent employment gains in the healthcare and social assistance sector have primarily been driven by strong demand throughout the pandemic.

Employment in the retail trade sector is projected to increase by 3.3 percent in 2021 and 5.2 percent in 2022, amounting to a total of 69,000 jobs. Although these jobs gains represent significant progress in the recovery, this sector is not expected to surpass its pre-pandemic employment level at any point over the forecast horizon. Indeed, consumers became even more

reliant on e-commerce to purchase goods during the pandemic to reduce the need for in-person transactions. These spending patterns are expected to persist over the coming years.

Although overall State employment is estimated to have grown in 2021, several sectors are estimated to have experienced modest declines. The financial and insurance sector and the real estate, rental, and leasing sector are estimated to have fallen 1.3 percent and 1.5 percent, respectively, in 2021. These jobs losses are partly due to cost-saving operational shifts to more affordable states by financial institutions, as well as weaker demand for commercial real estate in New York City. Going forward, the core business operations of financial institutions are not at present expected to relocate from New York City, and the commercial real estate market is expected to rebound longer term. Furthermore, as the U.S. economy continues to regain its footing in the aftermath of the pandemic, the jobs losses in these sectors are projected to be more than offset in 2022, with a combined increase of 14,000 jobs.

Risks

The risks facing the national economy pose similar risks to New York, but because of the State's role as an international travel hub, and the density of its population, these risks may be compounded for New York. The State labor market faces both downside and upside risks for 2022. Most notably, the sudden emergence of the Omicron variant and the possibility of future such variants could negatively impact the economy, as Delta did during the second half of 2021. This could undo some of the substantial progress made since May 2020 by sending businesses and consumers back into a cautionary posture and limiting international travel, leading to a new wave of layoffs and reduced hiring. As for the nation, the State labor market faces continued risk from supply chain disruptions. However, on the positive side, a more rapid return to pre-pandemic norms would boost the current pace of the jobs' recovery.

Other notable labor market risks include an overly aggressive response by policymakers and the prolongation of supply chains woes. The pandemic triggered a wave of introspection, causing workers to reassess their work-life balance, as well as their career aspirations and workplace arrangements. In turn, this self-analysis could further squeeze the already tight labor market and further slow the jobs recovery. On the policy side, an overly aggressive stance by the Federal Reserve poses an even larger risk to the State's jobs recovery than the nation's due to the importance of financial markets to the State economy. In contrast, a more substantial fiscal stimulus than expected could lead to a stronger jobs recovery for New York than implied by this forecast.

Financial Markets

Key Points

- As the U.S. economy continued to recover, supported by aggressive fiscal and monetary stimuli, the financial services industry experienced a very profitable 2021.

- During the first 11 months of 2021, U.S. companies raised a record $147.7 billion in initial public offering (IPO) proceeds. Likewise, during the first nine months of 2021, U.S. companies announced mergers and acquisitions (M&As) worth more than $2.0 trillion. These performances by IPOs and M&As represent their best first 11- and nine-month results, respectively. The associated underwriting and advisory fees further fueled solid earnings and profits by investment banks.

- At the onset of the pandemic, banks set aside a combined $120 billion in funds to cover potential loan defaults.[19] However, the sustained recovery of the U.S. economy resulted in a reversion of these loan-loss allowances. These funds have now begun to be returned to banks' bottom lines, providing a one-time increase in profits, as loans once thought to be bad prove good.

- The U.S. monetary policy response to the financial risk brought about by the pandemic has pushed interest rates toward record lows. The near-zero federal funds rate drove down short-term rates, while quantitative easing kept long-term rates in check.

- Solid bank profits for 2021 are estimated to have driven strong financial sector bonus growth of 16.2 percent for FY 2022, following 20.2 percent growth for FY 2021. However, with the impact of the pandemic-related fiscal stimulus diminishing and the Federal Reserve starting to tighten, finance and insurance sector bonuses are projected to decline 9.9 percent for FY 2023.

Recent Developments

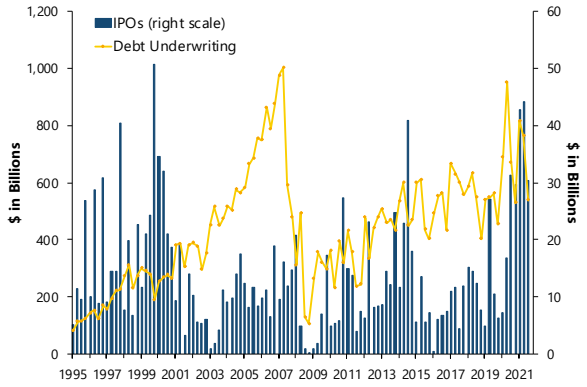
IPOs and their associated corporate debt underwriting fees represent a key driver of revenues and profits in the securities industry, as well as valuable leading indicators for the overall financial sector. Although debt underwriting is closely linked to interest rates and overall economic activity, IPOs tend to rise and fall with the secondary equity market. During the first 11 months of 2021, U.S. companies raised a record $147.7 billion in proceeds. This whirlwind of activity represents a 104.5 percent increase compared to the previous year.

Based on the first 11 months of data, and as shown in the below-left graph, IPOs were on track for having their best year ever in 2021. The technology sector was one of the busiest IPO markets in

[19] Ken Sweet. "Banks to see big profits as COVID 'bad' loans become 'good'." *Associated Press*, April 14, 2021. https://apnews.com/article/coronavirus-pandemic-43eb9aba6b7d68d07e8795465b65f5b6

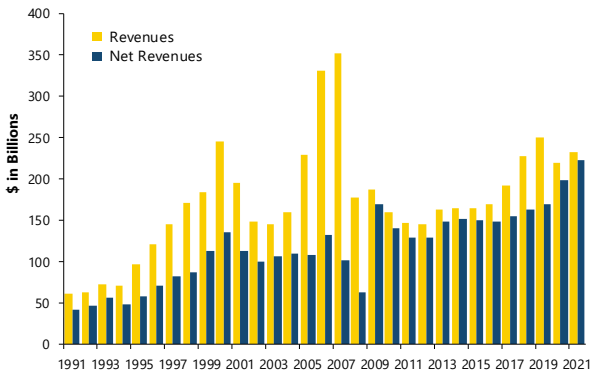
2021, primarily due to workplaces and schools transitioning to a remote environment. Specifically, pandemic-related restrictions accelerated the demand for innovative communication services, which in turn raised the value of these underlying technology-based companies. The biotechnology and pharmaceutical industry was another important catalyst of IPO activity in 2021, with the pressing need for effective vaccines and therapeutics against the Coronavirus causing an influx of investor interest.

Major Drivers of Financial Market Activity



Source: Securities Industry and Financial Markets Association (SIFMA).

NYSE Member Firm Revenues



Note: Estimate for 2021 is based on three quarters of actual data annualized; net revenues exclude interest expenses.
Source: SIFMA; Intercontinental Exchange (ICE).

Further fueling the demand for IPOs, central banks worldwide lowered key interest rates to near-zero levels at the start of the pandemic, resulting in lower financing costs and a swell of investor demand. However, total debt underwriting decreased by 9.0 percent compared to this time last year, primarily driven by a decline of 15.7 percent in the issuance of new corporate debt. This change is explained by banks' cautionary tightening of lending requirements, evidenced by the countervailing increase of 48.9 percent in the issuance of new corporate asset-backed securities. Additionally, like most banks at the start of the pandemic, companies set aside large amounts of cash reserves. This defensive positioning likely alleviated some of the need for new debt issuance as companies return to relatively more normal balance sheets.

M&As also had a solid first nine months of 2021, with U.S. companies announcing transactions valued at more than $2.0 trillion. Their combined value represents the best first nine months of a year ever and puts M&As on track to surpass their previous annual record in 2015. This fervent pace of deal-making activity represents pent-up demand stemming from fundraising efforts that had been put on hold during an initial period of pandemic-related uncertainty early in 2020. Additionally, M&As have been propelled by attractive financing costs, as well as businesses looking to counter weak internal growth. In total, these recent deals resulted in sizable advisory fees and boosted the sector's overall earnings.

The strong performance by investment banks through the first three quarters of 2021 is also partly due to a reversion of loan-loss allowances. These reserves reflect the estimated credit losses within a bank's portfolio of loans. At the onset of the pandemic in March 2020, the risk of default soared for many loans, causing U.S. banks to set aside a combined $120 billion in allowances. Fortunately, the U.S. economy proved remarkably resilient throughout the pandemic, thanks mainly to

unprecedented monetary and fiscal support. As the risk of loan defaults subsided in 2021, investment banks began to unwind these contra assets. These funds, in turn, provided a significant one-time boost to bank profits and further raised the financial sector's overall performance.

The monetary policy response at the onset of the pandemic also contributed to a strong finance sector performance. Overall, the Federal Reserve's actions helped stabilize financial markets and prevent systemic losses. Yet, the implications of these actions on financial sector profitability compared to the pre-pandemic period are ambiguous. At the start of the pandemic, the Federal Reserve decreased the federal funds target rate to near-zero levels, which drove down short-term rates and ensured sufficient liquidity in the market. Likewise, the Federal Reserve began executing quantitative easing in March 2020 through the monthly purchase of $80 billion of Treasury securities and $40 billion of mortgage-backed securities, keeping long-term rates in check. In general, lower interest rates increase the overall quantity demanded of credit as borrowers take advantage of lower financing costs. This point holds for banks, as well, which frequently finance investment opportunities by issuing new debt. However, these lower rates also decrease the net interest income that banks otherwise earn by lending.

The pandemic created reverberating distortions across U.S. markets and prices. Supply chain disruptions continue to plague businesses as labor shortages appear persistent. Consumer preferences remain out of sync with pre-pandemic spending patterns, creating added challenges to rebalancing production. In totality, these supply chain disruptions continue to fuel inflation, weigh down economic growth, and could negatively impact the financial sector.

Revenues for New York Stock Exchange (NYSE) member-firms were up 5.4 percent during the first three quarters of 2021, compared to the same period in 2020, following a 12.4 percent annual decline in 2020. The right-hand panel of the figure on the previous page shows NYSE member-firm total revenues and net revenues, where net equals total less interest costs. In contrast to the weak performance of total revenue, net revenue grew by 14.2 percent in the first three quarters of 2021, compared to the same period in 2020. These gains come after annual growth of 17.4 percent in 2020. Historically accommodative monetary policy since the onset of the pandemic, coupled with companies maintaining cash-heavy balance sheets to weather the riskier economic climate, has led to a divergence between these two revenue measures. As the Federal Reserve begins to taper its balance sheet and increases the federal funds rate, and businesses reduce their balance sheets to their pre-pandemic levels, this divergence is unlikely to persist.

Outlook

New York State's financial sector outlook remains cautious for 2022, as the overall economy looks to return to its pre-pandemic norms. Notably, many of the one-time boosts to bank profits in 2021 will dissipate in the coming year, shifting the sector's profit drivers back to core revenue growth. In the coming year, the effects of the pandemic-related fiscal stimulus will continue to wane, and the Federal Reserve is expected to start tightening as it shifts its focus from employment to price stability. As a result, IPO and debt underwriting are not projected to be as strong in 2022. Likewise, higher financing costs and the exhaustion of previously pent-up opportunities are projected to weigh down M&As.

In 2022, businesses will continue to resolve the supply chain issues that plagued them during 2021. This rebalancing of production is expected to support economic growth and alleviate some of the upward price pressure currently driving inflation, which in turn can be expected to sustain healthy financial sector profits, though the outlook does not call for a repeat of the industry's stellar 2021 performance.

Risks

The outlook for the financial sector for 2022 faces both downside and upside risks. Most notably, the resurgence of new COVID-19 variants and persistent inflationary pressures could negatively impact the economy and financial markets, resulting in lower industry profits than projected. However, on the positive side, widespread vaccinations, the availability of new therapeutics, and a more rapid return to pre-pandemic norms would boost the outlook for financial sector profits and wages.

Other notable financial sector risks include a stock market correction, an overly aggressive response by policymakers, and the prolongation of supply chains woes. A selloff in the stock market could spill over into business investment decisions and consumer demand. In turn, this pullback would hurt economic growth and bank profits. On the policy side, an overly aggressive stance by monetary or fiscal policymakers in either direction could lead to swings in financial sector profits. For example, if the Federal Reserve tapers asset purchases and raises the federal funds target rate too rapidly, it could temper economic growth. Similarly, unchecked fiscal stimulus could boost short-term growth prospects, but with the downside of higher long-term inflation and a subsequent need to raise interest rates. In the short term, the financial sector faces the risk of continued supply chain disruptions. If these delays and shortages persist through the holiday season or beyond, businesses could miss their sales targets, feeding into lower financial activity and weaker bank profits.

Personal Income and Wages

Key Points

- One of the many legacies of the COVID-19 pandemic, and the monetary and fiscal response it engendered, is the historically unprecedented pattern of wage and personal income growth posted for FY 2021 and estimated for FY 2022. These distortions will be just as impactful for FY 2023.

- New York State personal income increased by 8.5 percent in FY 2021, despite the effects of the pandemic on employment and wages. This strong performance is due to the unprecedented amount of fiscal stimulus, which significantly boosted non-wage income growth. State personal income is projected to increase by 1.0 percent for FY 2022, as the effects of the stimulus payments wane and the economic turmoil subsides.

- State wage growth declined by 2.0 percent in FY 2021 due to downward pressure from the beleaguered labor market. However, State wage growth surged by 13.0 percent in the second quarter of 2021, year-over-year. This recent strong performance was primarily due to strong bonuses and a rebound from the employment losses in the second quarter of 2020. State wage growth is projected to increase by 11.4 percent in FY 2022, as employment continues to recover.

- The non-bonus average wage in New York State increased by 8.9 percent in FY 2021, while the employment level remained well below its pre-pandemic level. This increase is partly due to job losses at the onset of the pandemic disproportionately affecting low-wage workers. Despite upward pressure from inflation, State non-bonus average wage is projected to increase by only 2.6 percent in FY 2022. This modest growth is due to the ongoing labor market recovery, where the proportion of low-wage workers to high-wage workers continues to approach its pre-pandemic level, driving down the average.

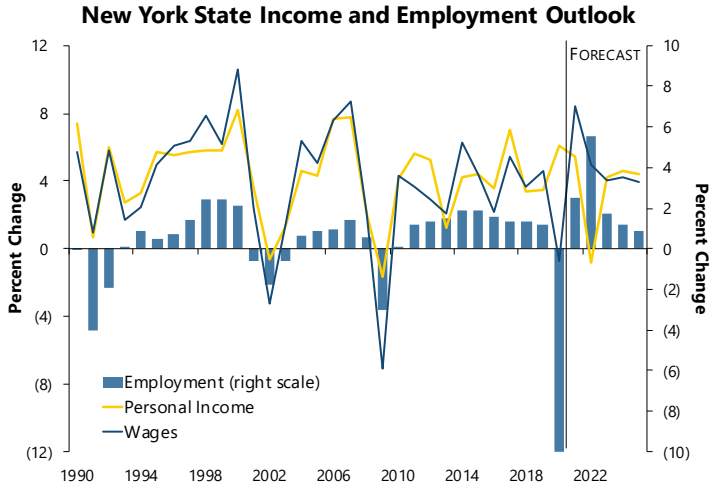
- Statewide bonus income is estimated to have increased 18.1 percent for FY 2021, propelled by the strong equity market. Moreover, strong wage withholding growth suggests that this momentum will likely carry into the coming fiscal year. Statewide bonuses are estimated to grow 19.8 percent for FY 2022, reflecting a historically tight labor market and concomitant efforts by businesses to retain workers.

- Non-wage income in New York State increased 20.8 percent in FY 2021 but is projected to fall 8.7 percent for FY 2022. This volatility is driven by pandemic-related fiscal stimulus that raised transfer income by 59.0 percent in FY 2021, but is projected to reduce it by 21.5 percent in FY 2022. Additionally, property income fell 2.1 percent in FY 2021 due to declines in dividend and interest income. However, property income is projected to rise by 3.2 percent in FY 2022, resulting from anticipated increases in rental, dividend, and interest income. Lastly, proprietors' income decreased by 0.6 percent in FY 2021 but is estimated to increase by 8.8 percent in FY 2022.

Recent Developments

Despite historic declines in employment and wages, New York State personal income increased by 8.5 percent in FY 2021. This performance was primarily driven by the unprecedented level of Federal stimulus that offset wage losses through supplementary UI benefits and other transfer payments, cushioning households from the devastating wave of job losses. Additionally, Federal stimulus spending under the expanded PPP loan program provided relief to proprietors' income, bridging the gap left in many businesses' payrolls.

The relatively muted decline in State wages, compared to an employment decrease of 12.6 percent in FY 2021, was due to the types of workers that lost their jobs. Specifically, the pandemic disproportionately affected low-wage workers, leading to a divergence between wages and employment. Furthermore, thanks to strong equity market growth, the State experienced an uptick in bonuses of 18.1 percent in FY 2021, buoying wages during this period.



Source: NYS DOL; BEA, DOB staff estimates.

Historically, New York State personal income and wages have moved together following the general employment trend. The figure above presents annual percent changes in New York State employment, wage, and personal income, illustrating the historically close relationship between these three series. The disruptive forces of the pandemic led in FY 2021 to the largest spread between New York State personal income and wage growth in the history of the series. This anomaly is due to an unusually large increase in State non-wage income of 20.8 percent in FY 2021, primarily propelled by the surge in State transfer income of 58.9 percent.

Wages and Variable Income

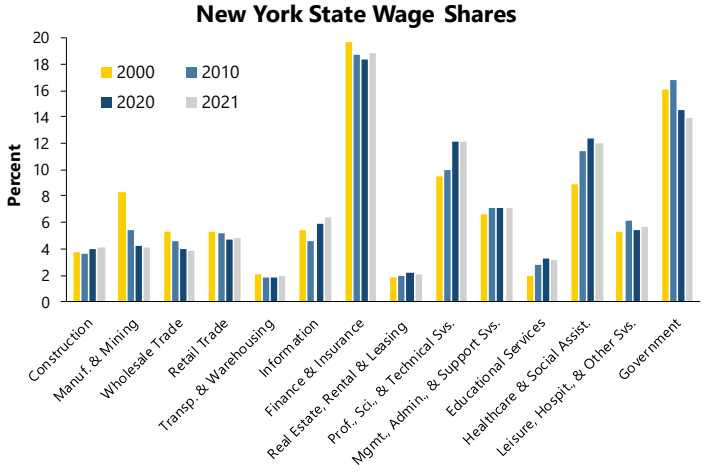
New York State personal income growth was weighed down in FY 2021 by the sharp decline in total wages at the onset of the pandemic. State wages represented 48.6 percent of personal income in FY 2021, where non-bonus wages accounted for the lion's share at 41.4 percent, and bonuses accounted for the other 7.2 percent. This decrease in State wages was primarily attributed

to the downward pressure from the beleaguered labor market, where fewer jobs meant lower total wages.

The onset of the pandemic caused State private employment to fall by 14.0 percent in FY 2021, whereas public sector employment experienced a more modest decline of 4.6 percent. Yet, wages fell only 2.0 percent. The apparent inconsistency between employment and wage growth is primarily due to the sectoral composition of the job losses, which were highly concentrated among those industries that pay the lowest wages, including leisure and hospitality, other services, and retail trade.

Wage growth surged by 13.0 percent on a year-ago basis in the second quarter of 2021, the most recent quarter of QCEW data available. This increase was primarily due to a strong rebound from the devastating job losses concentrated in the second quarter of 2020. New York State private employment increased by 14.1 percent in the second quarter of 2021, year-over-year, whereas the public sector employment saw a slight decline of 0.5 percent.

Employment also affected wages at a more disaggregated level. At the onset of the pandemic, the uneven impact of wage losses across economic sectors paralleled the employment losses. The figure below provides the share of wages by sector in the State for the past three decades, as well as for 2021. The financial and insurance sector's wage share is the largest, signifying its relative importance to the State.



Note: Shares for 2021 are based on two quarters of actual data and two quarters forecast; share of utilities sector is less than one percent, therefore excluded.
Source: NYS DOL; DOB staff estimates.

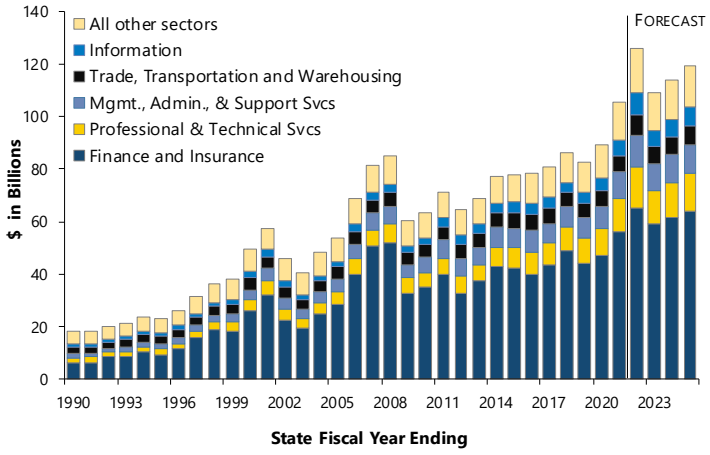
The above figure shows that the wage share for the leisure, hospitality, and other services sector is projected to increase in 2021. At the onset of the pandemic, this sector experienced the largest share of employment losses. However, as travel restrictions relaxed and tourism began to rebound, New York City and the State started to make up some of the lost ground. Indeed, the economic sectors with the sharpest wage declines at the height of the pandemic were also the same sectors that experienced the most substantial wage gains in the second quarter of 2021.

DOB's New York State wage concept consists of non-bonus wages and bonuses, estimated using QCEW data. Notably, the growth of non-bonus wages provides critical insights into the current health of the State economy. Variable income, commonly referred to as bonus income, signifies the recent performance of businesses and signals the direction of the State economy.

The statewide non-bonus average wage is estimated to have increased by 8.9 percent in FY 2021, despite the employment level remaining well below its pre-pandemic level. This increase is primarily due to the pandemic disproportionately affecting high-contact service industries, which include some of the lowest-paying industries in the State and where workers did not have the same ability to work remotely as higher-wage workers in other industries. A decline in the proportion of low-wage workers to high-wage workers caused a larger percentage decrease in employment relative to non-bonus wage, driving up the average.

The variable income component of New York State wages is estimated to have increased by 18.1 percent in FY 2021, primarily propelled by the strong equity market throughout the pandemic. To illustrate this point, the figure below shows bonuses by sector from 1990 to 2021, as well as forecasts for the next several years. New York State bonuses were estimated to have exceeded $105 billion in FY 2021, where the finance and insurance sector accounted for 53.5 percent of the total.

New York State Bonuses by Sector



Source: NYS Department of Labor; DOB staff estimates.

The figure above shows that bonuses for the professional, scientific, and technical services sector accounted for 12.0 percent of the total in FY 2021. Bonuses for the information sector represented an estimated share of 5.5 percent. The substantial bonus payouts accounted for by these two industries are primarily attributable to their high value-added, but also connote their recent strong underlying growth and the continued diversification of the State and New York City economies over the past two decades.

Non-wage Income

Historically, New York State non-wage income has accounted for approximately 46 percent of State personal income. However, State non-wage income surged by 20.8 percent in FY 2021, sending non-wage income's share of personal income to 51.4 percent. This jump in non-wage income was driven by the unprecedented amount of fiscal stimulus implemented in response to the pandemic, including the economic impact payments program and expanded supplemental UI benefits. These programs yielded $139.4 billion in additional income for New York, and as a result, State personal income grew by 8.5 percent in FY 2021. In comparison, State personal income would have decreased by an estimated 1.8 percent in FY 2021 without the Federal stimulus.

Property income — a vital component of New York State non-wage income — consists of interest income, dividend income, and rental income. Asset purchases by the Federal Reserve pushed long-term interest rates lower in 2021, depressing interest income. Additionally, corporate profits had relatively flat growth in 2021, while rental income suffered from high vacancy rates, especially in New York City. As a result, State property income declined by 2.1 percent in FY 2021.

Transfer income — an especially critical component of State non-wage income throughout the pandemic — enjoyed growth of 59.0 percent in FY 2021. These gains were largely thanks to the $124.7 billion boost from the fiscal stimulus payments, which accounted for 34.0 percent of the transfer income in FY 2021. The two most significant pieces of the pandemic-related stimulus payments to the State were stimulus checks amounting to $43.8 billion and supplemental UI benefits totaling $59.4 billion.

EFFECTS OF SELECTED FEDERAL PANDEMIC RESPONSE PROGRAMS ON NEW YORK STATE PERSONAL INCOME
($ in millions, annualized)

	2020Q2	2020Q3	2020Q4	2021Q1	2021Q2	2021Q3
Personal Income	**186,542**	**126,531**	**47,750**	**196,741**	**99,038**	**74,715**
Proprietor's Income	**17,342**	**24,125**	**7,064**	**5,397**	**12,577**	**7,795**
Farm proprietors' income	667	583	884	50	202	119
Coronavirus Food Assistance Program	465	295	798	9	95	53
PPP loans to businesses	202	288	86	41	107	66
Nonfarm proprietors' income (PPP)	16,676	23,542	6,179	5,347	12,375	7,676
Transfer Income	**169,200**	**102,406**	**40,686**	**191,344**	**86,461**	**66,919**
State unemployment insurance	74,776	64,048	28,698	69,907	59,876	44,582
Extended Benefits	16	362	1,425	4,031	2,286	379
Pandemic Emergency Unemployment Compensation (PEUC)	499	1,188	10,660	10,548	11,098	10,331
Pandemic Unemployment Assistance (PUA)	9,073	16,540	14,306	16,657	13,434	12,034
Pandemic Unemployment Compensation Payments	65,188	45,958	2,307	38,671	33,057	21,838
Other Transfers	94,424	38,358	11,988	121,437	26,586	22,338
Child Tax Credit	1,671	1,671	1,671	1,884	1,884	11,986
Economic impact payments	62,869	908	295	111,043	16,659	2,234
Lost wages supplemental payments	0	15,275	1,113	73	16	2
PPP loans to NPISH	3,757	13,224	3,974	1,464	3,347	1,897
Provider Relief Fund to NPISH	25,496	6,336	3,999	6,046	3,757	5,283
Increase in Medicare reimbursement rate	630	943	936	929	923	936

Source: Bureau of Economic Analysis.

New York State proprietors' income declined modestly by 0.6 percent in FY 2021. In total, the State received Federal stimulus payments equaling $13.5 billion in proprietors' income in FY 2021, offsetting a substantial portion of pandemic-related losses. These payments primarily came in the

form of expanded PPP loans, bridging the gap left in many businesses' payroll books, as well as offering loan forgiveness to eligible companies.

Lastly, State employee contributions to Social Security increased by 0.5 percent in FY 2021, amounting to $56.7 billion, and remain in line with State wage growth. These contributions are deducted from State personal income and historically track closely with employment and wage growth. In total, State employee contributions to Social Security accounted for 3.9 percent of State personal income in FY 2021, down from 4.2 percent in FY 2020.

Outlook

The outlook for New York State personal income remains cautious for 2022, as the overall economy looks to return to its pre-pandemic norm. Notably, many of the one-time boosts to State personal income in FY 2021 began to dissipate in FY 2022 and are expected to dissipate further for FY 2023. Moreover, the Federal Reserve is expected to shift its focus from employment to price stability. As a result, New York State personal income is projected to increase modestly by 1.0 percent for FY 2022 and another 1.1 percent for FY 2023.

New York State employment is expected to continue to recover from the ill effects of the virus, boosting total wages in the process. As a result, State wage growth is projected to increase by 11.4 percent in FY 2022, followed by 3.2 percent growth for FY 2023. However, New York State non-bonus average wage is projected to increase more modestly by 2.6 percent in FY 2022, followed by 1.7 percent growth for FY 2023. Moreover, as the labor market recovers, State average wages for some economic sectors are expected to be flat or even decline. This difference between wages and non-bonus average wages is primarily due to the rising ratio of low-wage workers to high-wage workers projected for the coming year, which in turn will cause the non-bonus average wage to fall. Historically, non-bonus average wages have trended with inflation, but that is not the case here due to the unprecedented fluctuations in low-wage worker employment. Despite this rebalancing, State-mandated minimum wage increases, coupled with labor shortages, will put upward pressure on non-bonus average wages for both FY 2022 and FY 2023. In terms of variable income, State bonus income is projected to grow by 19.8 percent in FY 2022, as the labor market remains comparatively tight, and businesses are eager to retain workers, but fall by 13.3 percent for FY 2023 due largely to a more muted financial sector performance projected for the coming fiscal year.

New York State non-wage income is projected to decline by 8.7 percent in FY 2022. This sharp decline is due to the continued waning of fiscal stimulus payments, where transfer income is projected to decrease by 21.5 percent in FY 2022. Within State non-wage income, property income is projected to increase by 3.2 percent in FY 2022, as long-term interest rates begin to rise, growth in core corporate profit returns, and the ill effects of the virus fade. Additionally, proprietors' income is projected to increase by 8.8 percent in FY 2022, primarily due to the continuation of the PPP. Overall, State employee contribution to Social Security is projected to surge by 8.4 percent in FY 2022, in line with wage growth. Due to the continued waning of fiscal stimulus, transfer income is projected to decline by 11.1 percent in FY 2023, leading to a 1.4 percent decline in non-wage

income, even though property income and proprietors' income are projected to increase by 5.7 and 6.0 percent, respectively.

Risks

New York State personal income faces several considerable downside and upside risks in 2022. Most notably, the resurgence of the COVID-19 variants could negatively impact the economy. This could undo the substantial progress since May 2020, including sending businesses back into a cautionary posture, leading to a new wave of layoffs, fewer hires, and weaker personal income growth. However, on the positive side, a more rapid return to pre-pandemic norms would boost the current pace of the recovery.

Other notable personal income risks include accelerated out-migration, an overly aggressive response by policymakers, and persistent inflationary pressures. According to the U.S. Census Bureau's Vintage 2021 state population estimates, New York State population declined by 319,000 from July 1, 2020, to July 1, 2021. If this trend continues, businesses may struggle to find workers, and State wage growth may stagnate. On the policy side, an overly aggressive stance by monetary or fiscal policymakers in either direction could lead to swings in State personal income. For instance, if the Federal Reserve tapers asset purchases and raises the federal funds target rate too rapidly, it could temper business hiring, leading to weaker wage growth. Finally, if inflationary pressures continue to mount, real State personal income growth may erode as businesses slow hiring due to the higher labor cost.

Housing Market

Key Points

- During the first 10 months of 2021, new home construction increased 24.1 percent compared to 2020, after declining 12.1 percent in the same period a year ago. Single-family starts saw their largest increase in over a decade at 23.4 percent growth.

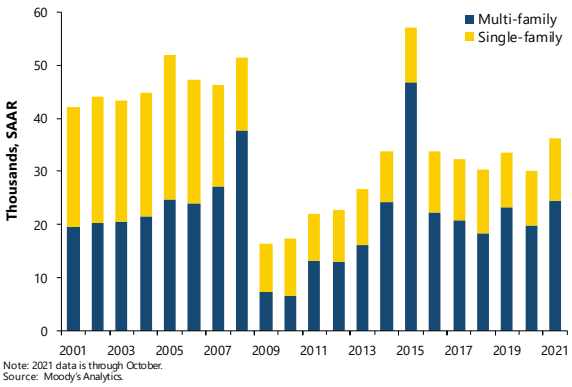
- According to data from the NYC Department of Finance, as of November 2021, all five boroughs in New York City experienced increases in sales activity from the same period in 2020; Manhattan led the trend with an 87.1 percent surge in units sold.

- As employers begin to bring their workforce back on site, the rental market in New York City has started to recover; median rent for an apartment in Manhattan was up 22.8 percent compared to a year ago, and vacancy rates were down 4.0 percent.

- Through September 2021, every county in the State experienced existing-home price appreciation compared to the same period a year ago; prices in 40 counties increased by over 20.0 percent.

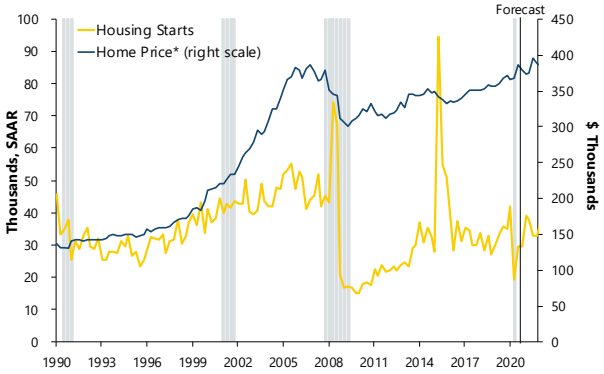
- New York State's average single-family home price is estimated to increase 13.9 percent in 2021, following 4.8 and 2.8 percent growth in 2020 and 2019, respectively. The average single-family home price in the State is projected to rise 12.3 percent in 2022.

Recent Trends in NYS Housing Starts



Note: 2021 data is through October.
Source: Moody's Analytics.

NYS Housing Market Outlook



*Average existing single family home price.
Source: Moody's Analytics; DOB staff estimates.

Recent Developments

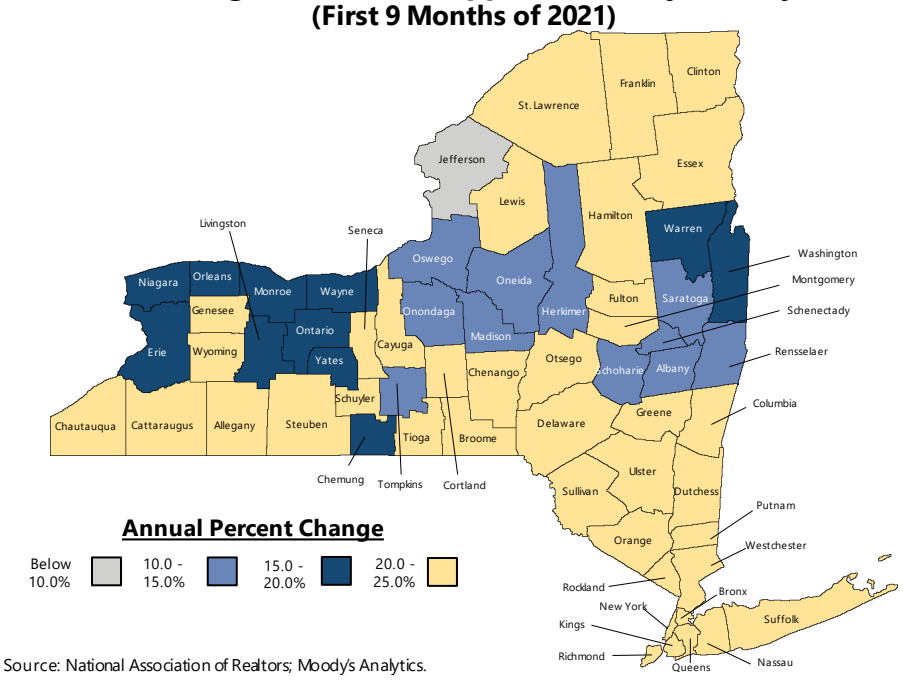
Lockdown measures during the early stages of the COVID-19 pandemic, an increase in prices for construction materials, and labor shortages led to a 10.3 percent decline in the New York State's housing starts in 2020. However, construction activity quickly rebounded after these initial barriers began to ease combined with household savings, flush from stimulus payments, and historically

low mortgage rates boosting home buyers' demand. Based on data for the first 10 months of 2021, housing starts increased 24.1 percent compared to the same period in 2020 and 9.1 percent compared to the pre-pandemic level in 2019. Single-family home starts increased 23.4 percent compared to a year ago, the largest increase in over a decade for the same period, while multi-family home starts increased even further, by 24.5 percent.

The State's median sales price for existing homes has continued to appreciate across all state regions. In Upstate, prices have increased by double digits in all counties where the six largest cities are located — Albany (Albany), Broome (Binghamton), Onondaga (Syracuse), Monroe (Rochester), Erie (Buffalo), and Oneida (Utica) counties. For the first nine months of 2021, Broome county saw the strongest yearly growth in prices at 22.7 percent. For the same period, Erie county's price appreciation has increased the most compared to its pre-pandemic level; the median sales price of existing homes in 2021 was 27.8 percent greater than in 2019.

The growth in the median sales price of existing homes for each county in the State is displayed below. All counties experienced price appreciation, where Jefferson County was the only county with a price increase of less than 10.0 percent. Moreover, 40 counties saw growth greater than 20.0 percent.

Existing-Home Price Appreciation by County
(First 9 Months of 2021)



Source: National Association of Realtors; Moody's Analytics.

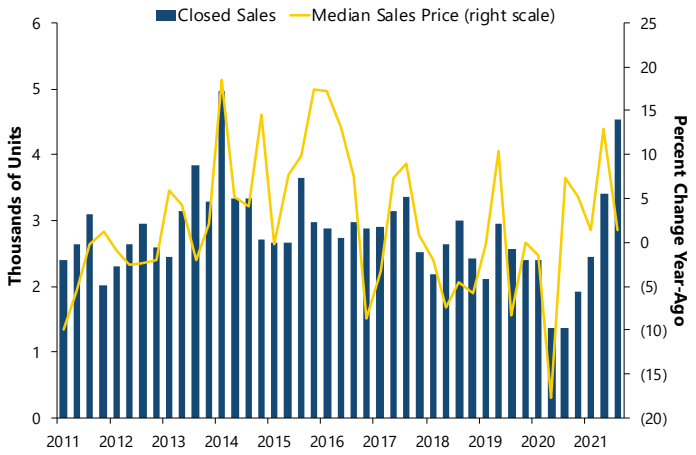
For the first 11 months of 2021, all five NYC boroughs experienced increases in units sold compared to the previous year. Manhattan led the trend with an 87.1 percent surge, followed by Brooklyn, Queens, Staten Island, and the Bronx (53.1 percent, 37.4 percent, 20.1 percent, and 8.4 percent, respectively). The Bronx is the only borough that has not reached its pre-pandemic sales levels and is down 12.9 percent for the same period in 2019. Compared with the same period a year ago,

median prices for existing single-family homes appreciated more than 20.0 percent in all five boroughs over the first nine months of 2021.

Although Manhattan's condo and co-op markets were devastated during the onset of the COVID-19 pandemic, the availability of vaccines, low mortgage rates, and improving labor market conditions have led to a surge in sales that landed its highest total in more than thirty-two years. The number of condo and co-op sales increased 39.1 percent in the second quarter, followed by 32.4 percent in the third; there were more than triple the number of sales compared to a year ago and 76.5 percent more than in the third quarter of 2019.[20]

The median listing price for condos and co-ops was $1.115 million in the third quarter of 2021 — up 1.4 percent year over year and 8.8 percent from the same period two years ago. Sales above $4 million rose 132.5 percent in two years, while sales below this threshold grew at a still impressive 72.7 percent.

Manhattan's Condo and Co-op Market



Source: Miller Samuel Inc. and Douglas Elliman Real Estate.

The resale market made a turnaround in the second half of 2021. With the number of sales rising faster than inventory available, the number of months taken to sell all active listing inventory at the current rate of sales — the months of supply — fell 75.7 percent from a year ago to 5.2 months. Furthermore, the number of closed sales in the third quarter expanded for the third consecutive quarter and more than tripled year over year to a new record of 3,869 sales. Due to the excess demand and accompanying supply constraints, the median sales price of existing co-ops and condos increased 5.4 percent to $970,000 in the third quarter of 2021, compared to a year ago.

As employers begin to bring their workforce back on site, the rental market in New York City is making a comeback. In November of 2021, the net effective median rent of an apartment in

[20] "The Elliman Report: Manhattan, NY Sales Q3-2021." *Miller Samuel Real Estate Appraisers and Consultants*, 2021. https://www.elliman.com/resources/siteresources/commonresources/static%20pages/images/corporate-resources/q3_2021/manhattan-q3_2021.pdf.

Manhattan was $3,369, up 22.8 percent from a year ago. However, it still remained 3.8 percent below its pre-pandemic level two years ago. More than half of leases, 53.7 percent, are now in two-year durations, up 16.7 percent from the record low in January as prospective tenants anticipate prices to continue to rise and vacancy rates — already 4.0 percent below their year-ago share — continue to fall.[21]

Outlook

Trends in multi-family homes led total starts in the State during the last two decades. Total starts are projected to increase 19.5 percent in 2021; as the State's economy continues to recover, so will the housing market, with housing starts growing an additional 10.1 percent in 2022. Prospects for the State's residential housing market also depend on the outlook for house prices. The average single-family home price in New York is expected to increase 13.9 percent in 2021, much greater than the 4.8 and 2.8 percent price appreciation in 2020 and 2019, respectively. New York State average single-family home price is projected to rise 12.3 percent in 2022.

Risks

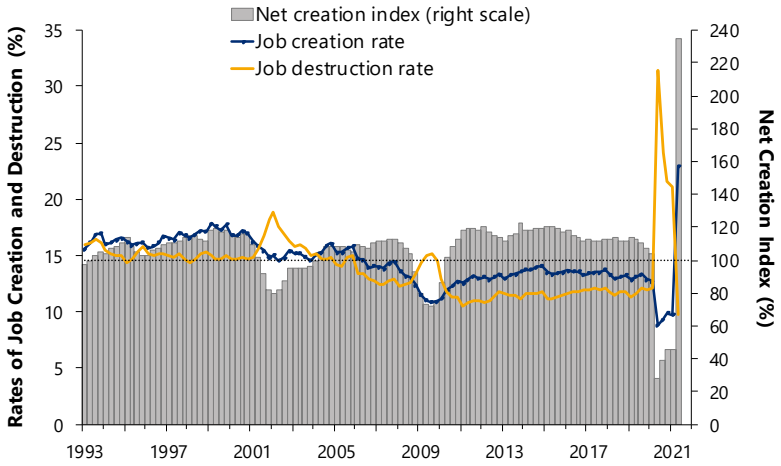
Homeownership affordability is justifiably a leading indicator of the health of the NY housing market. Higher prices for new and existing homes, higher-than-expected inflation constraints on household budgets, and higher-than-expected mortgage rates could all hurt affordability. Further declines in the State's population could also depress the housing market. Furthermore, new variants of COVID-19, such as Omicron — which became the dominant strand in the U.S. in late December 2021 — threaten the State's recovery of new construction, and thus, housing inventory levels. On the other hand, higher-than-expected income growth or lower-than-expected inflation could lead to higher demand for houses.

[21] "The Elliman Report: Manhattan, Brooklyn and Queens Rentals November 2021." *Miller Samuel Real Estate Appraisers and Consultants*, November 2021. https://www.millersamuel.com/files/2021/12/rental_11_2021.pdf.

New York State Labor Market Dynamics

The COVID-19 pandemic transformed the State economy in many ways over the last year and a half. Private-sector employment growth in New York State finally turned positive in the second quarter of 2021, following double-digit declines during the four preceding quarters. Before the pandemic, private employment growth in the State had already been slowing. As the pandemic hit in the second quarter of 2020, the net job creation index declined to 28.1 percent, nearly 40 percent of the record low reached during the great recession.[22] The job creation index dipped to its lowest level of 8.8 percent, and the job destruction index spiked to an unprecedented rate of 31.4 percent. The following quarters showed signs of recovery, and once the one-year mark was reached since the COVID dip, the net job creation index jumped up to 234.8 percent as the job creation rate hit historic highs and job destruction hit a historic low. Even with the record jump in the net job creation index, private sector employment in the second quarter of 2021 was 9.1 percent below its level in the second quarter of 2019.

NYS Private Sector Employment Dynamics



Source: NYS Department of Labor; DOB staff estimates.

Prior to the pandemic, the State's private-sector job market had already become less dynamic compared to the 1990s. Once the pandemic-induced volatility wanes, both job creation and destruction indices are expected to return to pre-COVID norms.

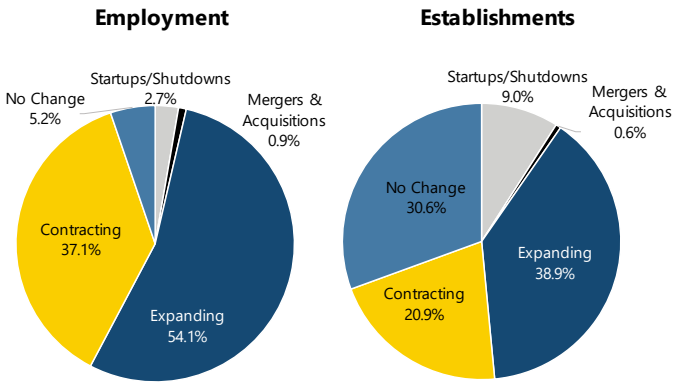
DOB expects private sector employment to grow 3.2 percent in 2021, after declining 11.2 percent in 2020. Employment is expected to grow 6.3 percent in 2022, as consumer confidence improves, labor shortages ease, more people return to office work, and tourism spending continues to recover. Going forward, State private-sector job growth will slow to a still-robust growth of 1.9 percent in 2023.

[22] For a detailed description of net job creation Index and other labor dynamics concepts, see FY 2022 Economic and Revenue Outlook, p.74. https://www.budget.ny.gov/pubs/archive/fy22/ex/ero/fy22ero.pdf.

The State's Employment and Establishment Base

The figure below shows the composition of the State's employment and establishment base for the second quarter of 2021 by type of establishment.[23] Existing firms are classified according to whether their employment levels expanded, contracted, or experienced no change relative to the same quarter of the prior year. Existing firms represent an overwhelming share of both establishments and employment: 90.5 percent of the State's establishment base and 96.5 percent of the job base. The impact of the post-pandemic recovery is apparent, as 54.1 percent of firms had expanding employment (as opposed to 27.8 percent in the second quarter of 2020), while only 37.1 percent saw contracting employment (versus 63.2 percent in the same quarter of 2020). The effect of COVID-19 was similar for establishments. While contracting firms had a 47.3 percent share and expanding firms had a 15.7 percent share in the second quarter of 2020, in 2021, only 20.9 percent of firms were contracting, and 38.9 percent were expanding. The share of firms with no change in employment increased to 30.6 percent in the second quarter of 2021 from 27.2 percent in the same quarter of 2020. The average size of existing firms also varies by firm type, with those firms experiencing no change in employment averaging 1.8 employees in the second quarter of 2021, while expanding firms averaged 15.1 employees, and contracting firms had an average of 19.3 employees.

Composition of State's Employment and Establishment Base
Second Quarter of 2021



Source: NYS Department of Labor; DOB staff estimates.

Startups and shutdowns accounted for 9.0 percent of the establishment base in the second quarter of 2021. Because these firms tend to be quite small, averaging 3.2 employees per firm, they accounted for only 2.7 percent of the State's private sector employment base. Firms which were either acquired or absorbed by other firms, accounted for 0.6 percent of the establishment base. The average size of these firms was 16.9 employees, and these firms accounted for 0.9 percent of employment.

[23] "Base" is defined as the average of the two quarters: second quarters of 2020 and 2021.

Manufacturing and Mining

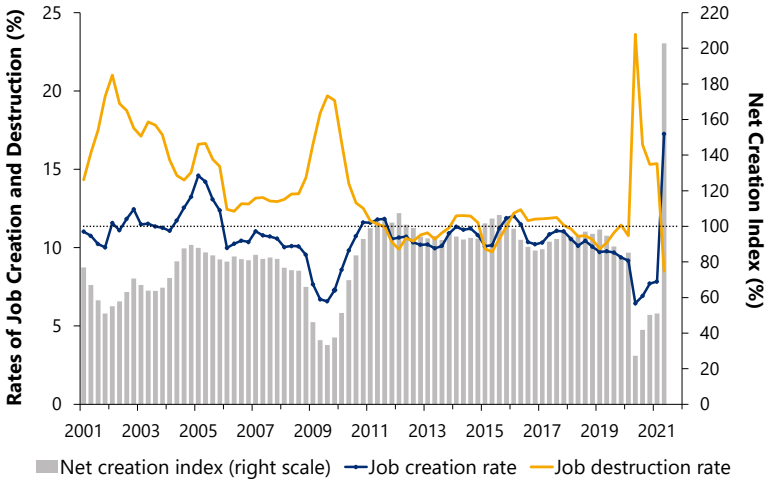
- The job destruction index peaked for the manufacturing and mining sector at the onset of the pandemic in the second quarter of 2020, with employment declining 15.8 percent on a year-over-year basis. Job losses were the highest among apparel manufacturers, declining 52.8 percent, followed by leather and allied products (36.3 percent) and furniture manufacturing (34.2 percent). During the same quarter, the job creation index approached levels not seen since the great recession.

- While all ten regions experienced job declines, the largest losses occurred in New York City, declining 36.5 percent, while the Capital Region lost only 6.1 percent of jobs.

- As businesses opened and the economy started to recover, job creation increased while job destruction declined, causing the job creation index to jump to 202.8 percent by the second quarter of 2021, when employment posted a year-over-year increase of 9.1 percent. Although the apparel sector experienced a 41.5 percent job increase during the second quarter of 2021 compared with the prior year, the level of employment remained 33.2 percent below the second quarter of 2019.

- Although the recovery in manufacturing continued over the course of 2021, supply chain disruptions are estimated to have slowed the recovery during the last quarter of the year. Employment growth of 1.8 percent is estimated for this sector in 2021, following a decline of 8.5 percent in 2020. Although job growth is expected to pick up in 2022 with 4.3 percent growth, the sector is expected to go back to its long-term declining trend without reaching pre-pandemic levels over the course of the forecast horizon.

Mining and Manufacturing



Source: NYS Department of Labor; DOB staff estimates.

Construction and Real Estate

- The construction and real estate sector saw a significant employment contraction during the pandemic, declining 21.0 percent in the second quarter of 2020 on a year-over-year basis as the job destruction index peaked at 33.2 percent. The construction industry fared worse than the real estate and rental and leasing services industry in the same quarter, contracting 26.0 and 10.9 percent, respectively.

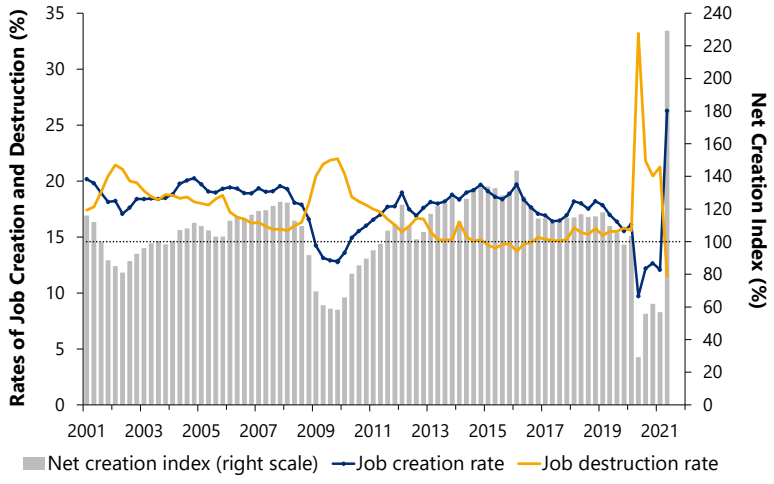
- The contraction of the construction industry was felt more in Downstate regions, whereas the job losses in the real estate and rental and leasing services industry were more prevalent in the upstate regions.

- Long Island saw the greatest decline, losing 23.3 percent of jobs in the second quarter of 2020. The Southern Tier saw the second most initial losses in the second quarter of 2020, shedding 22.3 percent of jobs on a year-over-year basis, and as of the second quarter of 2021, Long Island was still 7.3 percent below its second quarter of 2019 level, while Southern Tier remains the region furthest behind, at 11.5 percent.

- The construction and real estate services industry showed signs of recovery in the second quarter of 2021, as the net job creation index spiked to 229.2 percent. The sector posted employment gains of 16.1 percent over the second quarter of the prior year, nearly all of which came from the construction industry.

- With rebounding employment, the sector is estimated to grow 2.1 percent in 2021, followed by 4.1 percent growth in 2022, and returning to pre-pandemic levels in 2026.

Construction and Real Estate



Source: NYS Department of Labor; DOB staff estimates.

Trade, Transportation, and Warehousing

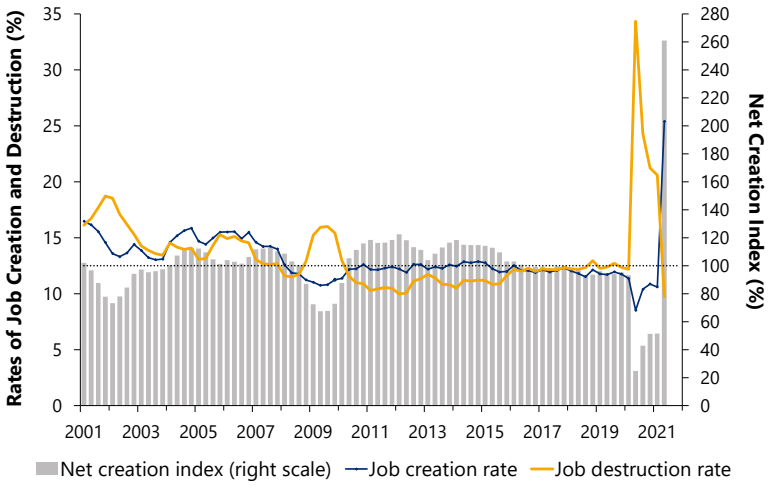
- The trade, transportation, and warehousing sector saw one of the largest employment declines at the onset of the pandemic. In the second quarter of 2020, the sector's job destruction index peaked at 34.3 as it shed 22.9 percent of its jobs on a year-over-year basis. The hardest hit was the retail trade industry, followed by transportation and warehousing, which posted 25.2 percent and 23.8 percent declines on a year-over-year basis, respectively. Wholesale trade had a relatively milder decline of 15.7 percent during the same period.

- The employment impacts of the pandemic on this sector were most prominent in highly populated areas with concentrated retail and transportation industries. The former, which had already been seeing job losses every year since 2016 with the proliferation of e-commerce, saw an acceleration of this trend during the pandemic as consumers shifted to online shopping. New York City posted the largest employment decline of 28.4 percent in the second quarter of 2020 compared to the year prior, whereas the Mohawk Valley lost only 13.4 percent.

- As consumer demand sprang back in the second quarter of 2021, the sector's net job creation index skyrocketed to 260.9 percent as businesses rushed to meet consumer demand. The transportation and warehousing and retail trade industries saw significant gains, posting 23.1 and 19.6 percent job increases, respectively, on a year-over-year basis.

- After heavy employment losses from the pandemic, the sector is estimated to increase 3.2 percent in 2021 and another 5.0 percent in 2022. However, neither wholesale nor retail trade employment is expected to reach pre-pandemic levels before 2027. On the other hand, the transportation and warehousing sector is expected to recover by 2023.

Trade, Transportation and Warehousing



Source: NYS Department of Labor; DOB staff estimates.

Information (Media and Communications)

- Due to its inherent dynamics, the information sector has had historically high rates of job creation and destruction. In the first quarter of 2020, the job creation index rose to a high of 21.2 percent, with the net creation index following suit to a high of 147.8 percent before winding down over the following quarter. The job destruction index peaked in the second quarter of 2020 at 26.9 percent, posting an employment decline of 7.7 percent on a year-over-year basis.

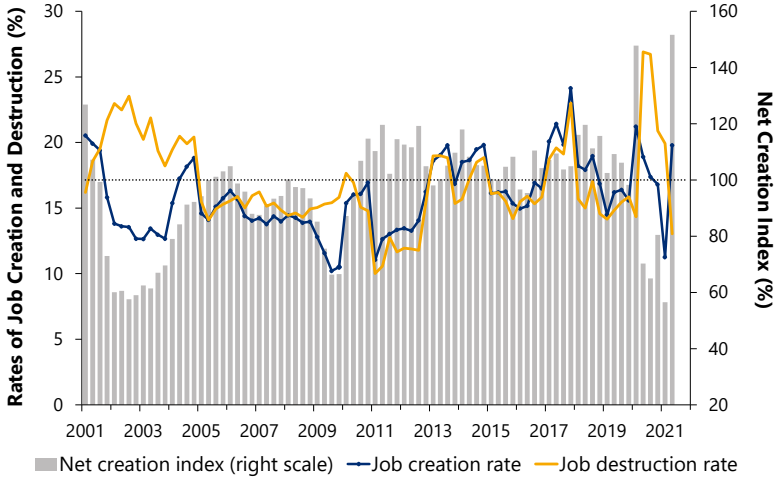
- The information sector suffered relatively few job losses at the onset of the pandemic, the majority of which were concentrated in the motion picture and sound recording industries, which declined 44.7 percent in the second quarter of 2020 from the year prior. Conversely, data processing, hosting, and related services, including Google, Facebook, and Amazon, showed stable growth throughout the pandemic.

- The North Country saw the largest employment declines in the second quarter of 2020, posting a decline of 24.7 percent on a year-over-year basis but was on a declining trend prior to the pandemic. The Capital Region was the least affected, declining only 5.5 percent during that period.

- Employment picked up in the second quarter of 2021 when the net job creation index surpassed its first quarter of 2020 peak by moving to 151.7 percent as the motion picture and sound recording industries posted year-over-year employment growth of 60.9 percent.

- With only moderate employment losses through the pandemic, employment in the sector is estimated to increase by 3.0 percent in 2021, followed by growth of 2.6 percent in 2022, and rebounding to its pre-pandemic levels.

Information



Source: NYS Department of Labor; DOB staff estimates.

Finance and Insurance

- The finance and insurance sector was the least affected sector by the pandemic. Easily transitioning to teleworking, the sector saw only a slight increase in the job destruction rate in the second quarter of 2020, up to 13.5 percent from 12.7 percent in the prior quarter, and posting only a 1.4 percent decline in employment on a year-over-year basis.

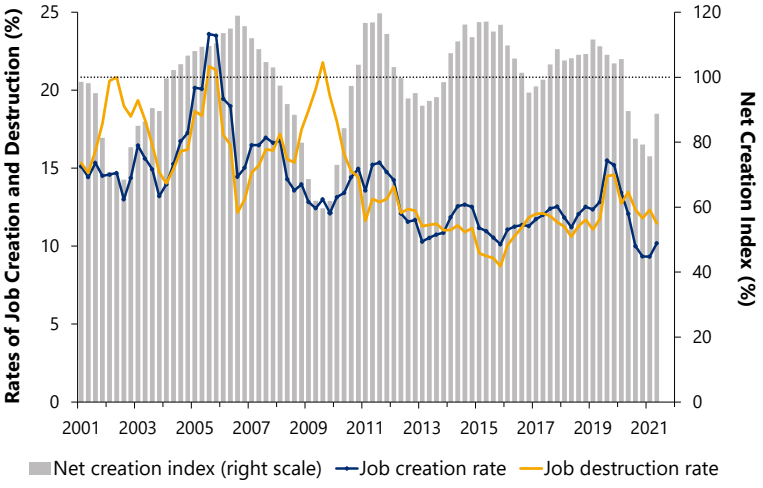
- The North Country was the hardest-hit region, posting a 4.9 percent decline in employment on a year-over-year basis in the second quarter of 2020. However, New York City, with the largest concentration of finance and insurance jobs in the State, saw the smallest decline of just 1.2 percent in the same quarter.

- Securities, commodity contracts, and other financial investments and related activities industry employment in the second quarter of 2021 was 1.7 percent below its level in the second quarter of 2019. Credit intermediation and related activities, and insurance carriers and related activities sectors were 3.1 percent and 3.7 percent below, respectively.

- Although finance and insurance saw only small declines in employment, it continued to post negative growth rates on a year-over-year basis through the second quarter of 2021, as the persistence of telework threatens to continue to drag on the sector as workers are able to shift to out-of-State locations. However, the sector showed signs of picking up in the second quarter of 2021 as the net job creation index regained some of its footing, moving up to 88.8 percent from its low of 75.6 percent in the prior quarter.

- Having sustained only moderate employment losses throughout 2020, the sector is estimated to have declined 1.3 percent in 2021 before growing 1.2 percent in 2022 but is not expected to return to pre-pandemic levels until after 2026.

Finance and Insurance



Source: NYS Department of Labor; DOB staff estimates.

Professional and Business Services

- This supersector consists of professional, scientific, and technical services and management, administrative, and other business support services. The job destruction index peaked in the second quarter of 2020, jumping to 26.7 percent from 15.7 percent in the prior quarter as employment in the sector declined 13.5 percent on a year-over-year basis.

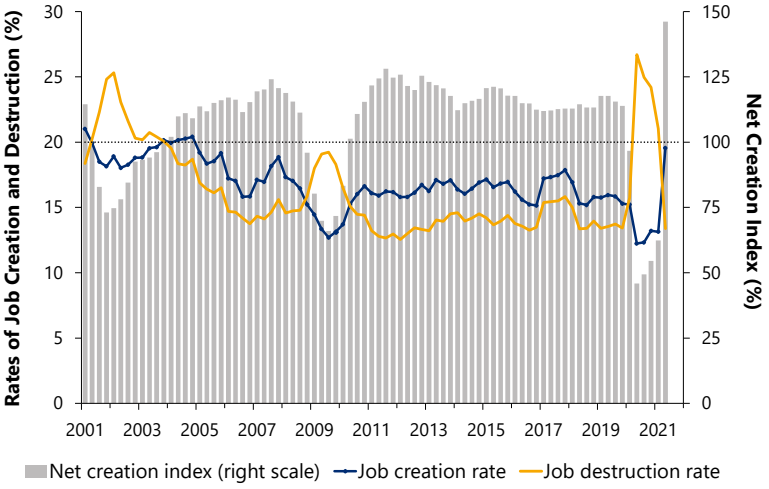
- The largest declines were seen within the administrative and waste services industry, declining 24.1 percent, as commercial spaces were shut down and the support staff for these spaces scaled back. Professional and technical services, however, saw only a drop of 5.3 percent as this industry was able to easily pivot to remote work.

- While Western New York saw the largest initial employment year-over-year decline of 16.3 percent in the second quarter of 2020, New York City remains the most affected, sustaining double-digit percent declines for four straight quarters.

- As the pandemic subsided in the second quarter of 2021, the net job creation index jumped to a high of 146.1 percent as administrative and waste services posted a year-over-year job gain of 13.5 percent. As of the second quarter of 2021, employment in the professional and technical services sector was only 2.8 percent below its second quarter of 2019 level, while administrative and waste services were still 13.8 percent below.

- Despite being a highly dynamic sector, the employment rebound has been sluggish due to the persistence of telework. The sector is estimated to grow 2.3 percent in 2021 and 4.4 percent in 2022, with employment returning to its pre-pandemic level in 2023.

Professional and Business Services



Source: NYS Department of Labor; DOB staff estimates.

Education and Health Care

- The job destruction index peaked for the education, healthcare, and social assistance sector in the second quarter of 2020 at the onset of the pandemic, with employment falling 11.1 percent on a year-over-year basis. These job losses were concentrated in the educational services, ambulatory healthcare services, and social assistance industries which all saw double-digit percent declines from the year prior. As the healthcare and education industries reeled to address the pandemic, the job creation index plummeted to levels never before seen.

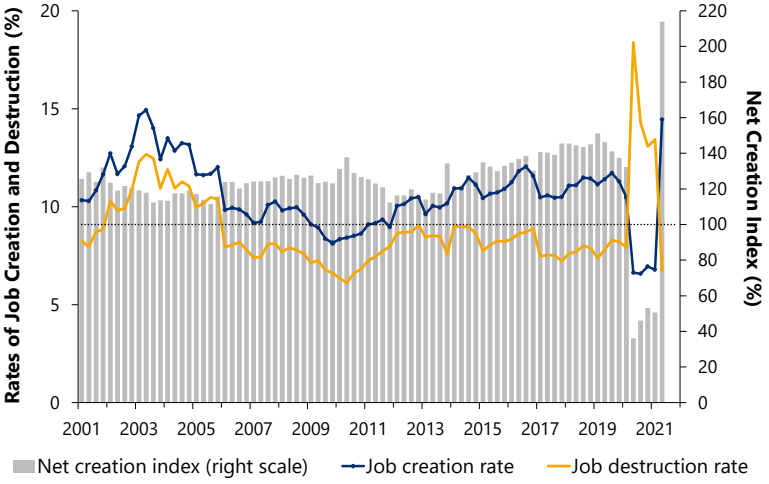
- While all ten regions experienced job declines in the second quarter of 2020, the largest losses occurred in Long Island, declining 15.2 percent, while the Southern Tier lost only 5.6 percent of jobs.

- Job creation and job destruction rebounded and reverted in the second quarter of 2021, causing the net creation index to spike to 213.9 percent by the second quarter of 2021 when employment posted a year or year increase of 8.0 percent. Despite recent gains, the level of employment in the sector remained 4.0 percent below the second quarter of 2019.

- Employment declines persisted through 2020 and into 2021 as healthcare and educational workers have been at higher risk of exposure and more hesitant to return to the labor force, contributing to the decline and slow return to pre-pandemic levels.

- Even so, the education, healthcare, and social assistance sector has remained fairly resilient as employment in the second quarter of 2021 was just 4.0 percent below that of the second quarter of 2019. Growth in the supersector is estimated to be 2.1 percent in 2021, followed by 4.1 percent growth in 2022, returning to pre-pandemic levels.

Education, Health Care, and Social Assistance



Source: NYS Department of Labor; DOB staff estimates.

Leisure, Hospitality, and Other Services

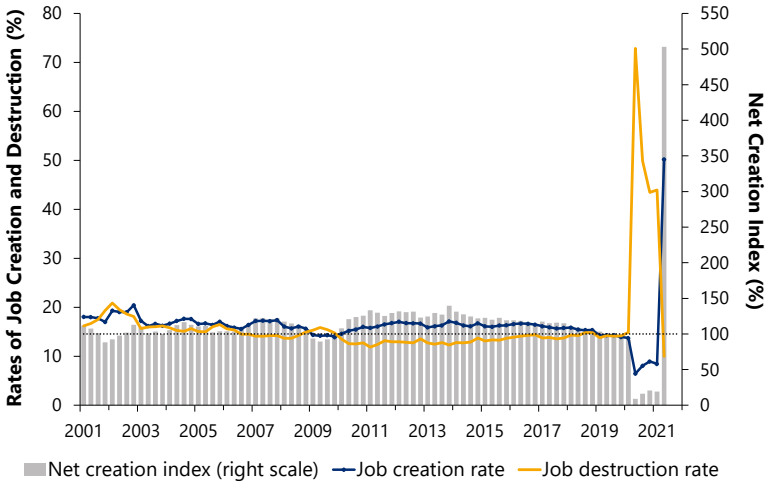
- This supersector combines the "arts, entertainment, and recreation" sector with the "accommodations and food services" and "other services" sectors. As the pandemic halted nearly all non-essential activities, the leisure and hospitality sector saw an inordinate rise in the job destruction rate in the second quarter of 2020 as employment fell by 49.9 percent statewide. Of these widespread losses, employment in the food services and drinking places; amusements, gambling, and recreation; and accommodation industries declined by more than 50 percent from a year ago.

- While the large job losses varied little between regions, the most densely populated regions saw greater declines, with New York City employment falling 54.2 percent in the second quarter of 2020 from a year ago, compared to a 41.7 percent drop in the North Country.

- With the release of pent-up consumer demand and the roll-out of vaccines, the net creation index jumped to 503.3 percent as locations reopened to the public in the second quarter of 2021. The largest employment gains in that quarter were made in the amusements, gambling, and recreation industry, which was a 109.0 percent increase from a year ago, followed by personal and laundry services (85.1 percent) and food services and drinking places (73.7 percent). Notably, performing arts and spectator sports showed the weakest gains of only 2.8 percent from a year ago.

- Despite these gains, the employment level in the second quarter of 2021 was 24.6 percent below the second quarter of 2019. Growth in employment in this sector is estimated at 8.9 percent in 2021, followed by 20.2 percent in 2022. Employment in the sector is not expected to reach its pre-pandemic level before 2027.

Leisure, Hospitality, and Other Services



Source: NYS Department of Labor; DOB staff estimates.

Risks to the State Forecast

All the risks to the U.S. forecast also apply to the State forecast. The State, like the nation, remains vulnerable to a resurgence of the virus due to holiday travel and cold weather forcing people indoors and hard-to-predict dynamics of the virus variants. The continued rise of COVID cases threatens the economic recovery and adds more uncertainties, especially in the service sectors. Further restrictions due to the new surge could pose significant downside risks to DOB's employment and personal income outlook. Weaker and/or more volatile than anticipated equity markets, in turn, could result in unexpected layoffs, weaker bonuses, and wage growth, as well as lower taxable capital gains realizations than are reflected in this forecast. Prolonged supply chain disruptions, more aggressive monetary policy tightening to fight inflation could delay the economic recovery. Lastly, the persistence of telework, relocation of urban workers out of State, continued trend of outmigration, and population decline, even after the pandemic subsides, also pose a risk to the New York State economy.

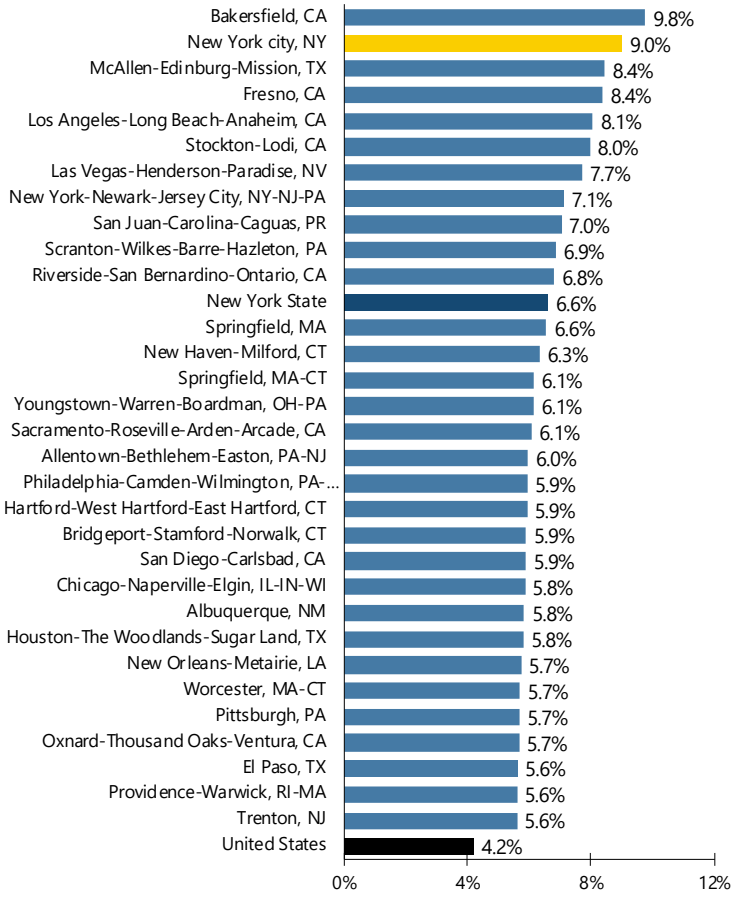
A more rapid return to pre-pandemic norms will result in a sooner-than-expected return to normal economic conditions and, therefore, more robust national and global growth through higher employment and output. Any additional stimulus bills to aid the economy may also result in higher-than-expected employment and income growth.

New York City's Lagging Recovery

Overview

New York City's sluggish jobs recovery continues to lag behind the rest of the nation, a major concern given the City economy is the growth engine for the entire region. During the first two months of the pandemic, New York State lost 1,983,000 jobs when the virus and the ensuing protective measures halted most everyday activities. Of these job losses, 957,000 were concentrated in New York City, of which fully 32.7 percent were located in the leisure and hospitality sector, a vital component of the City's economy. Since the start of the recovery in May 2020, the nation had regained 83.1 percent of its pandemic-related job losses as of November 2021, while the State had regained 60.4 percent of its job losses and New York City only 53.6 percent.

Unemployment Rate by MSA and Region
(Percent, November 2021, Seasonally Adjusted)



Note: Includes metro areas with more than 200K employment, top 30 with the highest unemployment rates are selected.
Source: Moody's Analytics.

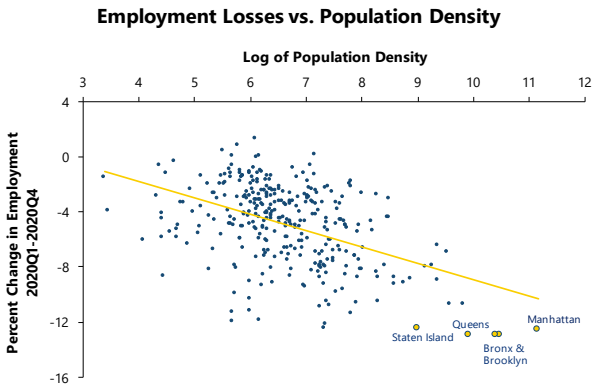
New York City is not alone as it struggles to regain its economic footing from the pandemic. The metropolitan statistical areas (MSAs) that posted the highest unemployment rates in the nation as of November 2021 include many of the largest cities in the country. However, the New York City unemployment rate is higher than all other MSAs except one. Moreover, the City's unemployment rate is fully 1.9 percentage points above that of the New York-Newark-Jersey City, NY-NJ-PA MSA that includes the City and the surrounding suburban communities. As of November 2021, the balance of New York State posted an unemployment rate of 4.8 percent, 4.2 percentage points below that of the City. These data highlight that the recovery has been slower in most major cities compared to the suburbs and more rural areas.

Several underlying factors explain New York City's sluggish jobs recovery from the pandemic. At the onset of the pandemic in the United States, New York City was the first epicenter of the virus. Moreover, international travel restrictions aimed at slowing the spread of the virus, coupled with businesses canceling all non-essential travel, led to a steep drop in enplanements and the closing of the City's convention centers, entertainment venues, galleries, and museums. In essence, many of the things that make New York City special were shut down and remained so for quite some time. Additionally, New York City contains an extraordinary concentration of high-skilled/high-income workers and business professionals with a high potential for remote work.

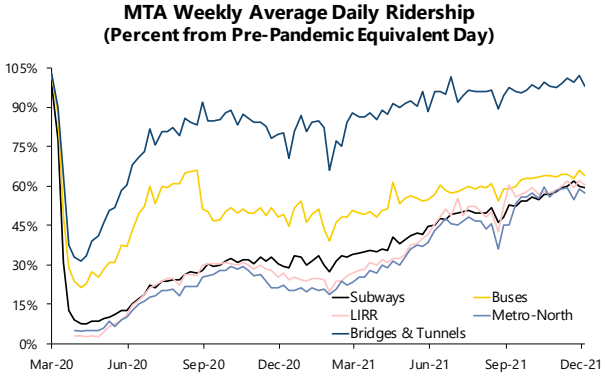
Population Size and Density

New York City is by far the most populous city in the nation, with an estimated population of 8,800,000 in 2020, more than double that of the next largest city, Los Angeles. Population size and international travel were considered to have played meaningful roles in the initial propagation of COVID-19, as the virus hit these cities first, in turn, leading to a sharper decline in consumer spending, especially on services. The figure below shows that labor markets in more densely populated counties fared worse during the pandemic.

The pandemic also dealt a substantial blow to New York City's immense public transportation system, which suffered severe revenue losses due to a steep decline in ridership. The graph below shows a sharp decline in ridership for buses, subways, and trains, as health-related fears led City residents to avoid an array of services that required close unprotected contact in enclosed places. As of December 2021, public transit ridership remained hampered at approximately 60 percent of its pre-pandemic level. Yet, New York City's bridge and tunnel traffic had fully recovered, indicating that many commuters may not yet feel comfortable riding on public transit, and others are still working remotely or not working at all.



Note: Scatter plot of the 331 U.S. counties with a workforce greater than 100,000 in 2020.
Source: Moody's Analytics/U.S. BLS (Local Area Unemployment Statistics); U.S. Census Bureau.



Note: The pre-pandemic equivalent day is between March 1, 2019 and February 29, 2020. MTA daily subway ridership historical data are available starting from March 1, 2020. The MTA LIRR and Metro-North metrics are available as daily estimated ridership and percent change from 2019 monthly averages. The MTA LIRR and Metro-North historical data are available starting from April 1, 2020.
Source: Metropolitan Transit Authority.

Tourism and Travel

Although the New York City economy is highly diversified, the travel and tourism industry still accounts for an outsized share of City employment. The leisure and hospitality sector alone accounted for 10.0 percent of total City employment in February 2020. New York City had 66.6 million visitors in 2019, of which 80 percent were tourists and 20 percent were business travelers. Indeed, tourists account for an overwhelming proportion of visitors to the City's most iconic cultural attractions. Of these visitors, 13.5 million were from abroad. Indeed, international visitors give the City a particularly large boost as the typical international traveler spent four times more than a domestic traveler visiting New York City in 2019.

ENPLANEMENTS BY MAJOR U.S. AIRPORT

CY 2019 Rank	State	City	Airport Name	CY 2019	CY 2020	Percent Change
6	NY	New York	John F Kennedy	31,036,655	8,269,819	-73.4%
21	NY	New York	Laguardia	15,393,601	4,147,116	-73.1%
7	CA	San Francisco	San Francisco	27,779,230	7,745,057	-72.1%
16	MA	Boston	General Edward Lawrence Logan	20,699,377	6,035,452	-70.8%
2	CA	Los Angeles	Los Angeles	42,939,104	14,055,777	-67.3%
12	NJ	Newark	Newark Liberty	23,160,763	7,985,474	-65.5%
3	IL	Chicago	Chicago O'Hare	40,871,223	14,606,034	-64.3%
20	PA	Philadelphia	Philadelphia International	16,006,389	5,753,239	-64.1%
17	MN	Minneapolis	Minneapolis-St Paul	19,192,917	7,069,720	-63.2%
18	MI	Detroit	Detroit Metro Wayne County	18,143,040	6,822,324	-62.4%
8	WA	Seattle	Seattle-Tacoma International	25,001,762	9,462,411	-62.2%
1	GA	Atlanta	Hartsfield - Jackson Atlanta	53,505,795	20,559,866	-61.6%
14	TX	Houston	George Bush Intcntl/Houston	21,905,309	8,682,558	-60.4%
15	FL	Miami	Miami International	21,421,031	8,786,007	-59.0%
10	FL	Orlando	Orlando International	24,562,271	10,467,728	-57.4%
9	NV	Las Vegas	Harry Reid International	24,728,361	10,584,059	-57.2%
19	FL	Fort Lauderdale	Fort Lauderdale/Hollywood	17,950,989	8,015,744	-55.4%
13	AZ	Phoenix	Phoenix Sky Harbor International	22,433,552	10,531,436	-53.1%
5	CO	Denver	Denver International	33,592,945	16,243,216	-51.7%
4	TX	Fort Worth	Dallas-Fort Worth International	35,778,573	18,593,421	-48.0%
11	NC	Charlotte	Charlotte/Douglas International	24,199,688	12,952,869	-46.5%

Source: Federal Aviation Administration 2020 Air Carrier Activity Information System (ACAIS).

The abrupt halt to tourism and travel wrought by the onset of the pandemic landed a devastating blow to the New York City economy. Convention centers, entertainment venues, galleries, and museums were temporarily closed. Most non-essential flights were canceled due to travel restrictions or safety concerns by airlines over the spread of the virus. New York City airports experienced the sharpest declines among the nation's major U.S. airports. Overall, New York City's enplanements decreased by over 70 percent between 2019 and 2020.

As a result, New York City visitor spending declined 53.9 percent in 2020, amounting to nearly $34 billion in losses, which balloon to $59.1 billion when accounting for indirect and induced impacts. In turn, leisure and hospitality employment in New York City fell 64 percent during the first two months of the pandemic, compared to a decline of 49 percent nationally.[24]

Despite evidence that tourism is starting to make a comeback, tourist-dependent businesses will likely face a prolonged downturn, especially if new, more virulent variants emerge and new closures are imposed. Indeed, total tourism spending is estimated at $24 billion for 2021, half that of 2019. NYC & Company, the City's convention and visitors bureau, anticipates that domestic travel to New York City will not return to its pre-pandemic level until 2023, while international travel is not expected to return until 2025. While leisure travel is projected to return to New York City in 2023, business travel is not expected to return until at least 2026.[25]

Remote Work

Finally, in response to the virus's rapid spread, many major cities imposed lockdowns that pushed workers to work remotely and consumer service-based establishments to close. As the world's financial capital, New York City is home to an extraordinary concentration of high-skilled workers and business professionals with a high potential for remote work. Moreover, before the pandemic, New York City hosted approximately 1 million commuters from both in-state and out-of-state residents combined, almost four times the number of the City's outbound commuters. Thus, the shift to remote work in New York City led to a particularly steep drop in the demand for office support services, which did not have the same options to work remotely. These negatively impacted industries include facilities support services, business support services, office administrative support services, eating and drinking establishments, and other consumer service-based establishments.

Although the shift to remote work during the pandemic has been a national phenomenon, its negative impact on New York City has been disproportionately greater than for the rest of the State and the nation. A recent analysis shows that even after controlling for the share of office-using jobs, office workers in states such as Florida and Texas are more likely to be coming into the office than those in New York City.[26]

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[24] "Economic Impact of Visitors in New York." Tourism Economics, 2020. https://esd.ny.gov/sites/default/files/2020-NYS-Tourism-Economic-Impact-New-York-City.pdf.

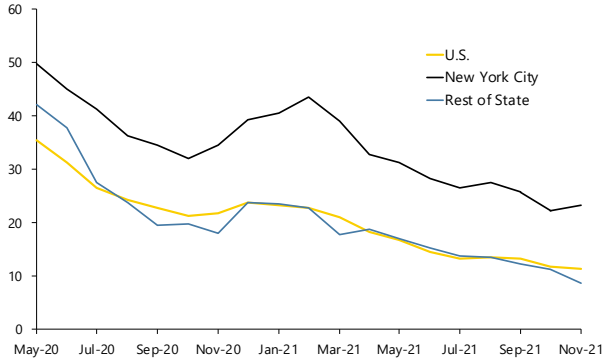
[25] NYC & Company Annual Report, 2020-2021. https://adobeindd.com/view/publications/3e235017-4549-4a3a-af52-171d9b95094e/86hk/publication-web-resources/pdf/NYC&Company_Annual_Report_2021-v20.pdf.

[26] Adam Kamins. "Office Jobs, Cities, and Return-to-Work Patterns." Moody's Analytics, November 4, 2021. https://www.economy.com/economicview/analysis/386491.

Moreover, the impact of this shift is likely to be more long-lasting for New York City. The figure below shows that the percentage of workers teleworking has declined since the onset of the pandemic. Still, the City lags well behind, with a full return unlikely until well into the future, if at all. A recent survey of major employers observes that "28 percent of Manhattan office workers are in the office on an average weekday, with only 8 percent in the office five days a week, while 54 percent remain fully remote."[27] Additionally, the survey finds that "employers expect that 49 percent of workers will be in the office on an average weekday by January 30, 2022, with 57 percent in the office at least three days a week while 21 percent remain fully remote."

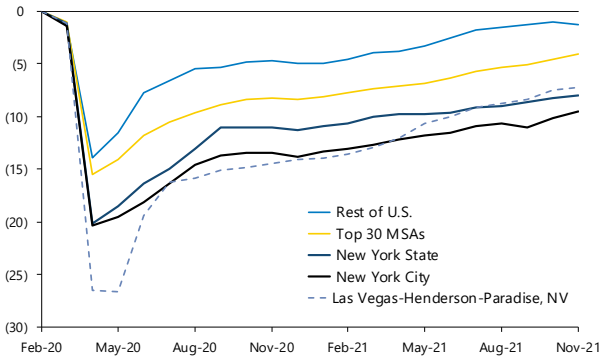
Compounding the impact for New York City GDP is the fact that workers with remote work potential earn above-average incomes and work mainly in high-skill service industries. Indeed, the prevalence of high-skill service workers in big cities is the primary driving force behind the strong positive relationship between remote work potential and population density.

Share of Teleworkers Due to the Pandemic
(Percent)



Note: Response to survey question: "At any time in the last 4 weeks, did you telework or work at home for pay because of the Coronavirus pandemic? (Enter No if person worked entirely from home before the Coronavirus pandemic)."
Source: BLS/CPS.

Tracking the Employment Recovery
(Percent Change from February 2020, Seasonally Adjusted)



Source: Moody's Analytics and NYS DOL

The prevalence of remote work contributed to a reallocation of workers from high-density to low-density commuting zones, causing residential prices in suburban and rural areas to rise significantly. Additionally, this influx of new residents boosted spending in local economies and accelerated their economic recovery.

The factors explaining New York City's slow economic recovery are not unique to the State's largest city, as many other major cities face similar recovery challenges. However, what is unique is New York City's combination of negative factors. For example, Las Vegas also experienced a significant drop in tourism and travel at the onset of the pandemic. Yet, Las Vegas does not have nearly the same population size and density as New York City, nor a workforce composition with the same ability to work remotely. Once some tourism and travel restrictions were eased, Las Vegas experienced a faster recovery, which now outpaces New York City's comeback.

[27] Katy Feinberg. "Return to Office Results Released – November." Partnership for New York City, Press Release, November 10, 2021. https://pfnyc.org/news/return-to-office-results-released-november.

The Long-Term Legacy of COVID-19

Once the pandemic sufficiently recedes, New York City's unique cultural and historical attractions will likely remain the magnets for domestic and international travelers they have always been. Rather, the long-term legacy of the pandemic will likely emerge from those areas where households and businesses were fortunate enough to find alternative ways of operating and found that they preferred them. These areas include the transition to remote work and the acceleration in the shift to e-commerce.

As the survey results cited above suggest, post-COVID rates of remote work will likely be permanently higher than pre-COVID rates and are likely to have meaningful economic effects that vary by region. Long Island and the Hudson Valley may benefit from the increase in local daytime spending by individuals who formerly were commuters. In turn, New York City could see a loss of commuter traffic and the associated spending on public transportation, personal services, and eating and drinking places and other retail. In addition to the ramifications for the MTA, the City is likely to be affected by a reduction in the demand for business-related travel more broadly, as businesses find online alternatives to in-person meetings and conventions.

In addition, the pandemic dramatically sped up the adoption of online channels for the purchase and delivery of goods and services. In the retail industry in particular, e-commerce saw its share of all sales grow by 50 percent in New York State. This enduring shift has already had meaningful consequences throughout the economy, boosting some growing sectors (like warehousing and distribution) but permanently reducing jobs in the labor-intensive brick-and-mortar retail segment, and can only accelerate.

These trends are likely to have long-term impacts on the State's industrial composition, with much of that impact being felt in New York City. DOB's five-year employment forecast indicates a number of industries that are likely to remain below their pre-pandemic peaks even as far out as 2026, including retail trade, which is expected to be 4.2 percent below its 2019 level by 2026; wholesale trade; leisure, hospitality, and other services combined; management, administrative, and support services; real estate and rental and leasing services combined; and manufacturing. For all of the reasons cited above, these losses are likely to be overrepresented in New York City. On the other hand, industries such as health care, transportation and warehousing, and information could see even stronger growth over the long term as a result of the legacy of the pandemic.

Finally, the pandemic has forced a rethinking of lifestyles and modes of conducting business nationwide. This phenomenon can in turn be expected to create opportunities for those firms that can devise innovative solutions to the problems that are most likely to arise in a post-pandemic world, particularly in the areas of digitally provided goods and services and cybersecurity. By dint of its ability to attract the most creative talent from around the country and the world, New York City has always been at the forefront of such innovation. Ensuring it can retain that position will likely be the most daunting challenge New York City has faced since the 1970s.

NEW YORK STATE PRIVATE EMPLOYMENT BY INDUSTRY										
	Employment in Thousands					Percent Change				
INDUSTRY	2017	2018	2019	2020	2021*	2017	2018	2019	2020	2021*
Mining and Manufacturing	448.6	446.3	441.8	404.3	405.4	(0.9)	(0.5)	(1.0)	(8.5)	0.3
Construction and Real Estate	586.7	601.1	608.1	550.8	546.7	2.0	2.5	1.2	(9.4)	2.5
Trade, Trans., and Warehousing	1,525.0	1,516.6	1,507.2	1,331.8	1,347.9	(0.1)	(0.5)	(0.6)	(11.6)	2.1
Information	269.3	275.8	277.5	267.9	270.7	1.3	2.4	0.6	(3.4)	(1.1)
Finance and Insurance	509.9	513.5	518.6	511.6	503.1	0.3	0.7	1.0	(1.4)	(2.1)
Business and Professional Svs.	1,314.5	1,339.4	1,369.0	1,243.8	1,244.2	1.9	1.9	2.2	(9.1)	(1.0)
Education and Health Care	1,848.6	1,914.0	1,981.6	1,873.0	1,897.3	3.1	3.5	3.5	(5.5)	0.3
Leisure, Hospitality, and Other Svs.	1,315.1	1,327.7	1,329.4	941.7	947.4	2.2	1.0	0.1	(29.2)	(2.1)
Other **	82.0	81.5	88.1	86.8	108.3	(0.8)	(0.6)	8.1	(1.6)	35.2
Statewide	**7,899.6**	**8,016.0**	**8,121.3**	**7,211.6**	**7,271.0**	**1.5**	**1.5**	**1.3**	**(11.2)**	**0.4**

* Levels for 2021 are based on the first two quarters of the year; 2021 growth rates are relative to the same period in 2020.

** Includes agriculture, utilities, and unclassified firms.

NEW YORK STATE PRIVATE EMPLOYMENT BY REGION										
	Employment in Thousands					Percent Change				
REGION	2017	2018	2019	2020	2021*	2017	2018	2019	2020	2021*
New York City	3,714.1	3,804.6	3,916.3	3,421.5	3,405.2	2.4	2.4	2.9	(12.6)	(2.6)
Long Island	1,107.5	1,111.4	1,115.1	991.9	1,018.5	1.3	0.4	0.3	(11.0)	4.5
Hudson Valley	771.5	781.6	793.1	707.7	718.5	1.5	1.3	1.5	(10.8)	2.3
Capital District	413.8	416.5	415.6	379.2	380.6	1.2	0.7	(0.2)	(8.8)	1.3
Mohawk Valley	129.8	129.7	129.4	117.5	117.5	1.3	(0.1)	(0.3)	(9.2)	0.9
North Country	105.9	106.5	105.8	96.3	97.8	0.1	0.5	(0.6)	(9.0)	4.4
Central New York	279.9	281.5	282.9	256.6	256.4	(0.2)	0.6	0.5	(9.3)	0.8
Southern Tier	227.8	228.9	227.1	206.4	206.6	(0.3)	0.5	(0.8)	(9.1)	0.7
Western New York	523.4	525.3	526.5	470.2	473.5	(0.1)	0.4	0.2	(10.7)	1.6
Finger Lakes	468.6	472.9	474.2	430.6	431.4	0.3	0.9	0.3	(9.2)	0.6
Unclassified	157.3	157.1	135.2	133.5	165.0	(0.4)	(0.1)	(13.9)	(1.3)	27.7

* Levels for 2021 are based on the first two quarters of the year; 2021 growth rates are relative to the same period in 2020.

REGIONAL EMPLOYMENT SHARES BY INDUSTRY									
REGION	Mining & Manuf.	Constr. & Real	Trade, Trans. & Wareh.	Infor-mation	Finance & Insurance	Business & Prof. Svs.	Educ. & Health Care	Leisure, Hosp. & Other Svs.	Other
New York City	1.5	7.7	15.0	6.0	9.7	19.7	27.9	11.6	0.8
Long Island	6.5	9.0	22.8	1.3	4.7	15.1	24.7	14.7	1.2
Mid Hudson	5.7	9.5	21.9	1.8	3.8	14.3	26.6	14.8	1.6
Capital Region	9.0	7.2	21.4	2.2	5.6	15.2	23.9	14.2	1.4
Mohawk Valley	12.5	4.6	25.8	1.0	6.0	7.5	27.8	13.6	1.3
North Country	9.7	7.1	25.4	1.4	2.4	7.4	26.5	16.7	3.4
Central New York	11.7	6.8	22.6	1.4	4.1	13.6	22.9	14.0	2.9
Southern Tier	15.7	4.9	20.3	1.5	3.5	9.8	28.5	13.9	1.8
Western New York	13.0	6.2	22.0	1.3	6.0	14.0	21.4	15.1	1.0
Finger Lakes	14.0	6.6	19.5	1.5	3.5	14.3	25.9	12.7	2.1
Statewide	**5.6**	**7.7**	**18.6**	**3.7**	**7.0**	**17.1**	**26.0**	**12.9**	**1.4**

Note: Shares are based on the period from 2020Q3 through 2021Q2.

REGIONAL EMPLOYMENT TRENDS: 2017-2021										
	Employment (000's)					Percent Change				
Region	**2017**	**2018**	**2019**	**2020**	**2021***	**2017**	**2018**	**2019**	**2020**	**2021***
	Manufacturing and Mining									
New York City	73.0	70.0	66.7	52.9	52.6	(3.7)	(4.2)	(4.7)	(20.8)	(1.9)
Long Island	71.1	70.7	70.5	65.3	66.7	0.2	(0.5)	(0.3)	(7.3)	3.0
Hudson Valley	43.7	43.9	43.9	40.9	40.8	(2.2)	0.5	(0.1)	(6.7)	(0.1)
Capital District	35.3	35.7	35.2	34.2	34.4	1.4	1.0	(1.1)	(2.9)	1.2
Mohawk Valley	17.0	16.9	16.9	14.9	15.0	0.7	(0.5)	0.1	(11.8)	(1.4)
North Country	10.4	10.5	10.4	9.4	9.5	(0.6)	1.5	(1.2)	(9.9)	3.3
Central New York	30.7	31.1	31.5	29.9	30.0	1.1	1.3	1.4	(4.9)	1.4
Southern Tier	35.1	35.3	34.9	32.5	32.5	(0.6)	0.5	(1.1)	(6.9)	0.4
Western New York	66.0	65.9	66.0	61.6	61.6	(1.1)	(0.2)	0.2	(6.7)	0.3
Finger Lakes	64.3	64.2	64.6	61.2	60.2	(2.1)	(0.2)	0.7	(5.3)	(1.7)
Unclassified	2.1	2.3	1.2	1.5	1.9	57.3	7.3	(49.7)	26.2	17.8
Statewide	**448.6**	**446.3**	**441.8**	**404.3**	**405.4**	**(0.9)**	**(0.5)**	**(1.0)**	**(8.5)**	**0.3**
	Construction and Real Estate									
New York City	279.6	287.5	291.8	261.3	258.5	2.6	2.9	1.5	(10.4)	0.2
Long Island	97.0	98.9	99.4	89.3	90.2	3.4	2.0	0.5	(10.2)	5.4
Hudson Valley	68.0	70.5	73.2	66.3	66.9	2.3	3.6	3.9	(9.5)	5.2
Capital District	28.1	28.3	28.7	27.2	26.5	1.4	0.6	1.3	(5.0)	1.8
Mohawk Valley	5.6	5.7	5.7	5.4	5.1	3.4	1.6	(0.2)	(4.1)	1.2
North Country	6.9	7.4	7.2	6.7	6.7	(0.3)	8.5	(3.4)	(6.4)	8.2
Central New York	17.7	18.6	18.3	17.2	16.7	(1.5)	4.8	(1.4)	(6.0)	3.4
Southern Tier	11.3	11.3	11.5	10.1	9.6	0.6	(0.7)	1.8	(12.3)	2.5
Western New York	30.9	30.8	31.1	28.6	28.0	(1.9)	(0.1)	0.8	(8.2)	5.3
Finger Lakes	29.1	29.6	30.3	28.2	27.7	0.6	1.7	2.7	(7.2)	3.5
Unclassified	12.6	12.5	11.0	10.5	10.7	(1.9)	(0.3)	(12.4)	(3.9)	5.9
Statewide	**586.7**	**601.1**	**608.1**	**550.8**	**546.7**	**2.0**	**2.5**	**1.2**	**(9.4)**	**2.5**
	Trade, Transportation, and Warehousing									
New York City	601.8	601.6	607.0	510.7	508.7	0.4	(0.0)	0.9	(15.9)	(1.5)
Long Island	260.2	258.2	256.3	225.6	231.4	0.4	(0.8)	(0.7)	(12.0)	4.8
Hudson Valley	173.2	171.6	170.1	152.5	157.3	0.0	(0.9)	(0.9)	(10.3)	5.4
Capital District	85.7	85.5	85.2	79.9	80.9	(0.9)	(0.2)	(0.3)	(6.2)	4.2
Mohawk Valley	31.8	31.4	31.3	29.7	30.5	1.5	(1.0)	(0.4)	(5.3)	5.3
North Country	26.7	26.4	25.8	24.4	24.7	(1.2)	(1.4)	(2.0)	(5.6)	5.0
Central New York	64.5	63.7	62.5	57.8	57.8	(2.4)	(1.3)	(1.8)	(7.5)	1.8
Southern Tier	45.2	44.9	44.2	41.4	42.1	(1.5)	(0.6)	(1.6)	(6.4)	3.7
Western New York	110.8	110.4	109.8	101.5	104.7	(2.0)	(0.4)	(0.6)	(7.5)	5.7
Finger Lakes	88.9	89.4	88.0	82.5	83.9	0.1	0.5	(1.6)	(6.2)	3.8
Unclassified	36.2	33.6	27.0	25.8	25.9	0.2	(7.4)	(19.6)	(4.2)	(0.7)
Statewide	**1,525.0**	**1,516.6**	**1,507.2**	**1,331.8**	**1,347.9**	**(0.1)**	**(0.5)**	**(0.6)**	**(11.6)**	**2.1**
	Information									
New York City	186.5	195.7	203.8	201.5	205.1	4.8	5.0	4.2	(1.1)	(0.1)
Long Island	18.1	16.9	15.1	13.9	13.2	(2.2)	(6.4)	(10.5)	(7.9)	(9.1)
Hudson Valley	14.5	14.3	14.4	13.2	12.5	(4.1)	(0.9)	0.7	(8.6)	(9.1)
Capital District	9.3	9.5	9.0	8.6	8.1	(1.8)	2.0	(5.6)	(4.3)	(7.5)
Mohawk Valley	2.3	2.1	1.5	1.3	1.2	(3.6)	(7.5)	(29.5)	(14.0)	(12.6)
North Country	1.7	1.7	1.7	1.4	1.4	(2.4)	(0.1)	(1.4)	(15.9)	(2.8)
Central New York	4.8	4.7	4.5	3.8	3.7	0.7	(2.2)	(4.3)	(14.3)	(6.4)
Southern Tier	3.6	3.7	3.6	3.3	3.2	(0.5)	1.9	(2.7)	(7.9)	(4.2)
Western New York	7.6	8.0	7.4	6.4	6.1	(0.1)	5.0	(7.3)	(13.0)	(8.8)
Finger Lakes	8.1	8.1	7.8	6.6	6.2	(6.6)	(0.8)	(3.7)	(14.9)	(9.0)
Unclassified	13.0	11.3	8.8	7.9	10.0	(20.1)	(13.0)	(21.8)	(10.2)	27.6
Statewide	**269.3**	**275.8**	**277.5**	**267.9**	**270.7**	**1.3**	**2.4**	**0.6**	**(3.4)**	**(1.1)**

(Cont'd on next page)

REGIONAL EMPLOYMENT TRENDS: 2017-2021 (*cont'd*)										
	Employment (000's)					Percent Change				
Region	**2017**	**2018**	**2019**	**2020**	**2021***	**2017**	**2018**	**2019**	**2020**	**2021***
	Finance and Insurance									
New York City	328.3	333.3	339.3	333.8	325.9	0.1	1.5	1.8	(1.6)	(2.9)
Long Island	51.2	49.4	48.7	47.7	47.8	(0.5)	(3.5)	(1.4)	(2.2)	(0.7)
Hudson Valley	28.1	27.9	28.0	27.3	27.0	0.5	(0.7)	0.3	(2.5)	(1.8)
Capital District	21.4	21.6	21.9	21.5	21.3	(2.3)	0.8	1.5	(2.0)	(1.2)
Mohawk Valley	6.6	6.6	7.1	7.0	7.0	(2.7)	(0.2)	7.8	(1.7)	1.7
North Country	2.3	2.4	2.4	2.3	2.3	1.5	2.3	(0.0)	(2.3)	0.8
Central New York	11.2	10.7	10.6	10.6	10.3	(5.3)	(3.7)	(1.3)	(0.3)	(1.9)
Southern Tier	7.6	7.6	7.6	7.4	7.2	(2.6)	(0.1)	(0.2)	(2.0)	(4.0)
Western New York	30.2	29.8	29.9	29.3	27.6	6.7	(1.4)	0.4	(1.9)	(6.4)
Finger Lakes	14.7	15.2	15.4	15.1	14.9	(2.1)	3.6	0.8	(1.5)	(1.9)
Unclassified	8.3	9.0	7.9	9.7	11.7	12.5	8.8	(12.8)	22.9	26.3
Statewide	**509.9**	**513.5**	**518.6**	**511.6**	**503.1**	**0.3**	**0.7**	**1.0**	**(1.4)**	**(2.1)**
	Professional and Business Services									
New York City	707.7	727.6	760.3	679.3	666.4	3.2	2.8	4.5	(10.7)	(4.2)
Long Island	166.5	164.5	163.0	150.2	153.7	(0.1)	(1.2)	(0.9)	(7.9)	3.6
Hudson Valley	105.2	107.4	109.9	102.2	102.7	2.8	2.0	2.4	(7.0)	0.8
Capital District	60.5	60.3	60.6	57.4	58.8	2.1	(0.3)	0.4	(5.3)	2.7
Mohawk Valley	9.6	9.6	9.4	8.8	8.7	(1.6)	0.6	(2.2)	(6.3)	(0.2)
North Country	7.4	7.5	7.5	7.0	7.4	2.3	2.1	(0.2)	(6.3)	7.5
Central New York	35.8	37.0	37.1	35.1	34.9	2.6	3.5	0.1	(5.4)	(0.4)
Southern Tier	22.1	22.2	22.1	20.3	20.3	(1.7)	0.5	(0.4)	(8.2)	0.6
Western New York	71.9	71.5	72.9	66.3	66.2	(1.9)	(0.5)	1.9	(9.0)	0.1
Finger Lakes	68.0	68.8	68.6	62.5	61.6	(0.3)	1.1	(0.2)	(8.9)	(2.6)
Unclassified	60.0	62.9	57.6	54.7	63.4	0.8	4.8	(8.5)	(5.0)	18.4
Statewide	**1,314.5**	**1,339.4**	**1,369.0**	**1,243.8**	**1,244.2**	**1.9**	**1.9**	**2.2**	**(9.1)**	**(1.0)**
	Education, Health Care, and Social Assistance									
New York City	885.8	929.3	978.6	937.0	957.9	4.2	4.9	5.3	(4.3)	1.1
Long Island	251.6	258.8	267.4	248.1	253.7	2.2	2.9	3.3	(7.2)	2.2
Hudson Valley	195.0	199.8	205.7	191.4	192.3	3.1	2.5	3.0	(7.0)	(0.9)
Capital District	97.1	98.7	98.3	92.5	90.6	2.5	1.6	(0.4)	(5.9)	(2.9)
Mohawk Valley	35.8	36.3	36.2	33.4	32.5	2.5	1.4	(0.4)	(7.6)	(3.9)
North Country	26.8	27.0	27.5	26.1	26.2	1.3	1.0	1.5	(5.0)	0.1
Central New York	61.6	62.5	65.1	59.8	58.8	0.1	1.5	4.1	(8.1)	(3.0)
Southern Tier	62.0	62.6	62.4	59.9	58.8	0.4	0.9	(0.3)	(4.1)	(3.0)
Western New York	107.1	109.8	110.2	102.1	101.8	1.9	2.5	0.3	(7.4)	(0.9)
Finger Lakes	115.8	118.2	120.3	112.8	112.9	2.7	2.1	1.8	(6.2)	(1.3)
Unclassified	10.0	11.1	9.9	10.0	11.8	0.9	10.6	(10.5)	1.2	20.0
Statewide	**1,848.6**	**1,914.0**	**1,981.6**	**1,873.0**	**1,897.3**	**3.1**	**3.5**	**3.5**	**(5.5)**	**0.3**
	Leisure, Hospitality, and Other Services									
New York City	627.2	635.8	642.1	420.2	400.8	2.6	1.4	1.0	(34.6)	(12.6)
Long Island	181.9	183.9	183.4	141.3	149.6	2.8	1.1	(0.3)	(23.0)	10.9
Hudson Valley	132.9	135.2	136.3	102.9	107.4	1.8	1.8	0.8	(24.5)	6.8
Capital District	71.6	72.1	71.6	53.0	54.7	2.7	0.7	(0.7)	(26.0)	4.3
Mohawk Valley	19.9	19.8	20.0	15.6	16.0	2.1	(0.5)	1.1	(22.1)	6.0
North Country	20.4	20.2	20.0	15.7	16.3	(0.1)	(1.2)	(0.7)	(21.7)	9.9
Central New York	46.9	46.4	46.4	35.2	36.8	0.5	(1.1)	0.0	(24.3)	5.7
Southern Tier	37.5	38.1	37.4	28.1	29.0	1.6	1.6	(1.8)	(24.9)	5.0
Western New York	94.2	94.6	94.6	70.0	72.7	1.1	0.4	0.0	(26.0)	4.1
Finger Lakes	70.9	70.7	70.2	53.1	55.5	1.1	(0.3)	(0.7)	(24.3)	6.3
Unclassified	11.6	10.9	7.2	6.7	8.5	2.9	(6.6)	(33.5)	(7.4)	34.1
Statewide	**1,315.1**	**1,327.7**	**1,329.4**	**941.7**	**947.4**	**2.2**	**1.0**	**0.1**	**(29.2)**	**(2.1)**

* Levels for 2021 are based on the first two quarters of the year; 2021 growth rates are relative to the same period in 2020.

Source: NYS Department of Labor.

New York State Adjusted Gross Income

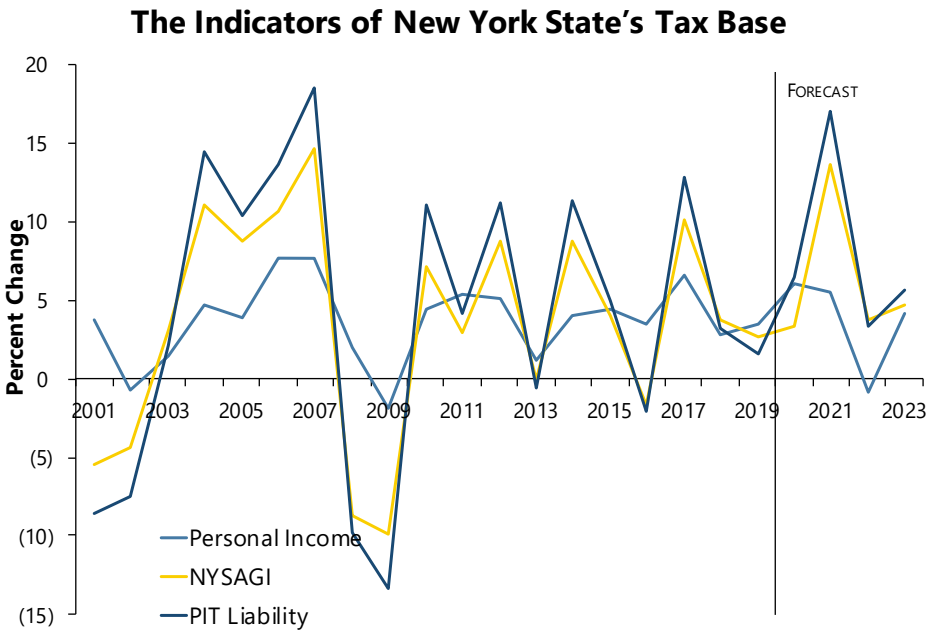
Personal income tax (PIT) receipts account for almost 70 percent of the State's total tax revenue. Personal income tax liability is based on taxable income, which in turn is derived from New York State adjusted gross income (NYSAGI), in conformity with New York State tax laws.[28] Detailed knowledge of the composition of this personal income tax base and its determinants is critical to accurately projecting New York State's largest revenue source.

At the aggregate level the components of NYSAGI, such as dividend income and capital gains income, vary with the State and national economies. DOB's forecast of the components of personal income uses these linkages. Anticipated or actual changes in Federal tax law can also generate considerable volatility, which DOB aims to incorporate into its forecast.

As illustrated below, growth in personal income is less volatile than growth in NYSAGI and in PIT liability, while movements in NYSAGI and PIT liability are closely related. The figure below illustrates the effects of actual and anticipated Federal law changes on NYSAGI, using "frozen" 2002 State tax law to remove the effects of NYS law changes. For example, in 2017 a behavioral shift by taxpayers in anticipation of the adoption of Federal tax law changes caused NYSAGI growth to rebound to 10.1 percent after a 1.7 percent decline in 2016. This shift also affected growth in 2018, not only because of the larger base in the prior year, but also because the Tax Cuts and Jobs Act of 2017 (TCJA) significantly limited itemized deductions. In particular, the Federal deductibility of state and local taxes (SALT), including property taxes, created an incentive to shift SALT payments in the opposite direction, from 2018 into 2017, in order to take advantage of the last tax year under the prior Federal law. Income growth in 2017 was also affected by a 10-year-old Federal law requiring the repatriation of hedge fund incentive and management fees that managers had been able to defer receiving or recognizing if they were in offshore funds. These deferred fees had to be recognized for tax purposes by the end of 2017, thus amplifying NYSAGI's growth that year.

NYSAGI growth slowed to 3.7 percent in 2018, followed by still slower growth of 2.6 percent in 2019. A sharp rebound in economic activity after an unprecedented drop during 2020 due to COVID-19, along with unprecedented levels of fiscal and monetary support, allowed NYSAGI to grow an estimated 3.3 percent that calendar year. Federal support continued into 2021 before fading later in the year, while equities markets set several records during the course of the year; consequently, NYSAGI is estimated to have grown 13.6 percent despite the impact of the Delta variant of the virus. As the economy continues to approach normal functioning, NYSAGI growth is expected to slow to 3.8 percent in 2022 with a rebound to growth of 4.7 percent in 2023.

[28] A detailed discussion of the relationship between three important indicators of the size of the State's PIT base, PIT liability, NYSAGI, and state personal income, can be found later in this section.



Note: PIT liability is computed based on 2002 NYS tax law. NYSAGI and liability for 2020 are preliminary.
Source: NYS DTF; Moody's Analytics; DOB staff estimates.

The Major Components of NYSAGI

Prior to Tax Year 2014, DOB forecasts of NYSAGI components were based on samples of detailed historical tax return data. Beginning with Tax Year 2015, data are based on the entire population of tax returns and are used to construct estimates for all the income components.

Although the measure of taxable wages derived from State tax returns does not precisely match the dollar amount derived from QCEW data, they tend to follow a similar trend. To be consistent with DOB's New York State macroeconomic forecast, projected growth rates for taxable wages from 2021 onward are based on the estimated growth of total State wages derived from the macroeconomic forecast, which is based on QCEW data.

CHANGES IN NYSAGI AND ITS MAJOR COMPONENTS								
	2016	2017	2018	2019	2020*	2021	2022	2023
	Actual				Estimate			
NYSAGI								
Level ($ Billions)	794.1	874.6	906.9	930.8	961.7	1,092.6	1,133.9	1,186.9
Change ($ Billions)	(13.7)	80.5	32.3	23.9	30.9	130.9	41.3	53.1
% Change	(1.7)	10.1	3.7	2.6	3.3	13.6	3.8	4.7
Wages								
Level ($ Billions)	592.1	626.4	645.4	673.4	664.0	720.0	755.8	786.0
Change ($ Billions)	7.8	34.2	19.0	28.1	(9.4)	56.0	35.7	30.2
% Change	1.3	5.8	3.0	4.4	(1.4)	8.4	5.0	4.0
Capital Gains								
Level ($ Billions)	75.3	99.9	102.2	93.2	118.8	175.8	198.4	212.2
Change ($ Billions)	(20.6)	24.6	2.3	(9.0)	25.5	57.0	22.6	13.9
% Change	(21.5)	32.7	2.3	(8.8)	27.4	48.0	12.8	7.0
Partnership/S Corporation								
Level ($ Billions)	91.3	108.4	99.3	98.7	97.8	114.7	128.8	137.2
Change ($ Billions)	(1.2)	17.1	(9.1)	(0.6)	(0.9)	16.9	14.1	8.4
% Change	(1.3)	18.7	(8.4)	(0.6)	(0.9)	17.3	12.2	6.5

Source: NYS DTF; DOB staff estimates.

*2020 estimates are based on processing data except for wages.

Positive Capital Gains Realizations

Positive capital gains realizations play a large role in determining NYSAGI and its growth, both because they are a large share of income and because of their volatility. DOB's forecasting model attempts to capture the volatility in capital gains income by incorporating those factors that are most likely to influence capital gains realization behavior, such as anticipated and actual tax law changes, financial market activity, and real estate market activity.[29] Realization behavior has been shown in the past to be greatly affected by Federal and State taxes on capital gains income because they are a cost associated with the buying and selling of capital assets. Taxpayers may decide to realize capital gains earlier than planned if they expect taxes on capital gains to increase.

Capital gains plunged 21.5 percent in 2016 after growth of just 2.6 percent in 2015. While economic growth was weak in 2016, the U.S. economy was not in recession, implying that there were other forces at work. As discussed above, taxpayers appear to have delayed realizing capital gains from 2016 into 2017, anticipating a capital gains tax rate reduction that never materialized. This shift both

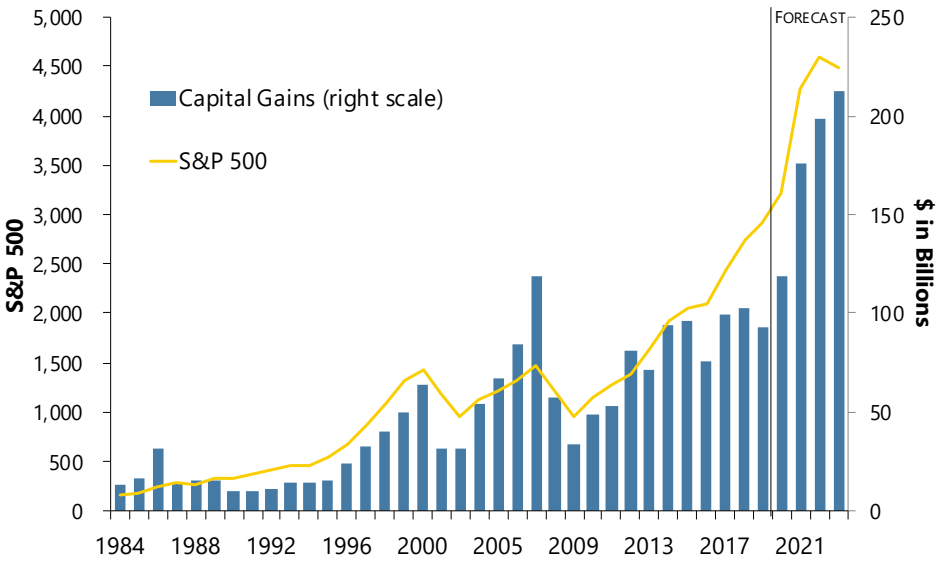
[29] For a discussion of the Division's traditional approach to modeling capital gains realizations, see L. Holland, H. Kayser, R. Megna and Q. Xu "The Volatility of Capital Gains Realizations in New York State: A Monte Carlo Study," *Proceedings, 94th Annual Conference on Taxation*, National Tax Association, Washington, DC, 2002, pages 172-183.

depressed capital gains growth in 2016 and elevated 2017 growth to 32.7 percent. Capital gains grew just 2.3 percent in 2018, then fell 8.8 percent in 2019. Strong growth in stock prices and a booming housing market in 2020 and 2021 – in spite of the pandemic – helped capital gains to increase an estimated 27.4 percent in 2020 with even stronger growth of 48.0 percent expected for 2021. DOB anticipates that growth will slow to 12.8 percent and 7.0 percent in 2022 and 2023, respectively.

The figure below shows how fluctuations in equity markets (measured by the S&P 500 index) help explain the magnitude of fluctuations in capital gains realizations. Note that while capital gains collapsed during both the "dot-com" recession of 2001 (during which 9/11 also took place) and the housing bust/Global Financial Crisis (GFC) of 2007-09, no such collapse has accompanied the COVID-19 crisis.

After years of steady but slowing growth, equity prices (measured by the S&P 500 index) surged 17.0 percent in 2017 on an annual average basis. Despite high volatility in 2018, brought on in part by trade disputes and failure to resolve Brexit, the index still increased 12.1 percent in 2018. Growth slowed to 6.1 percent in 2019, with volatility that lasted into the summer of that year. In spite of a plunge in the spring of 2020 as COVID-19 pandemic shutdowns surged, the reopening economy and news of advances toward a coronavirus vaccine led the index to rise 10.5 percent for 2020. As widespread vaccination got underway and with relatively few government-mandated shutdowns, DOB expects that the S&P 500 advanced 32.5 percent on an annual average basis in 2021, but that growth will slow to 7.4 percent in 2020 before declining 2.7 percent in calendar 2023.

Capital Gains Realizations and the S&P 500 Index



Note: 2020 CG realizations are estimated.
Source: Moody's Analytics; NYS DTF; DOB staff estimates.

Fluctuating levels of private equity and hedge fund activity and profitability also contribute to capital gains realizations. Private equity firms own stakes in companies not listed on a public stock exchange, generally receiving a return on their investment in one of three ways: through a sale or merger of the company; a recapitalization; or by selling shares back to the public through an IPO. The returns on private equity investments often are not realized for several years, but the rate of return is generally high relative to returns on publicly held stocks, to compensate for the higher degree of risk and the value added through the extraction of operating efficiencies. Though related to the performance of equity and real estate markets, capital gains from private equity funds have their own dynamics.

Hedge funds, investment partnerships that are limited to very high-income individuals and use aggressive and sometimes risky trading techniques to try to generate high returns, failed to outperform the broader market again in 2021, the same as in the previous two years, though the overall industry had gains. According to data provider Hedge Fund Research (HFR), the investment firms gained 8.7 percent on average from January to November 2021, trailing the S&P 500's 24.0 percent return over the same time period.[30] Meanwhile, "The average hedge fund returned 11.6% in 2020, according to Hedge Fund Research data, lagging behind the S&P 500 index's 16% gain."[31] Reuters noted that 2020 was not as profitable for hedge funds as 2019, with earnings falling to $127 billion from $178 billion. In 2021, the *Financial Times* said, "Big rallies in US tech behemoths and a series of painful market jolts have disrupted many hedge funds' attempts to lure back investors who have deserted the sector in recent years … Inflows into hedge funds have, in turn, proved meagre with performance concerns adding to investor questions about returns and fees."[32]

If hedge funds are continuing to struggle to attract investment funds, the *Financial Times* suggests that private equity has taken up the slack: "Hedge funds have suffered a slow exodus of clients in recent years, with investors more often drawn to the higher returns supposedly on offer in private equity and private debt funds."[33] A July 2021 report from Benchmark International said that "Data released in a recent report shows the unprecedented performance of U.S. Private Equity (PE) during the first half of 2021, continuing its intense pace for the third quarter in a row. PE firms closed on 3,708 deals worth a combined $456.6 billion. That's almost two-thirds of the $711.6 billion deal value recorded in *the entire year* of 2020, *and* the two years prior." (Emphasis in the original.) The report said that several factors stimulated the deals, including

- A sustained economic recovery;
- Falling unemployment insurance claims;
- High-yield debt, due to low Treasury yields;
- Plenty of "dry powder" on the buy side;
- The possibility of a hike in the tax rate on capital gains;

[30] Laurence Fletcher, "Hedge funds struggle to lure new money as performance lags," *Financial Times*, January 3, 2022, available at https://www.ft.com/content/f80b74b5-eb3c-4778-a67a-9b7ccd90389a.
[31] Svea Herbst-Bayliss, "Top hedge funds earn $63.5 billion in 2020, highest in a decade: LCH data," Reuters, January 24, 2021, available at https://www.reuters.com/article/us-hedgefunds-returns/top-hedge-funds-earn-63-5-billion-in-2020-highest-in-a-decade-lch-data-idUSKBN29U00R.
[32] Fletcher, cited above.
[33] Fletcher, cited above.

- Elevated pricing on the sell side.[34]

Similarly, articles on private equity later in 2021 continued to note strong performance by the sector. While one article noted that private investments were "markedly down" in the first quarter of 2020, "they began to bounce back in the second half" of that year, "in part aided by the federal government (CARES Act) and the Federal Reserve's easy monetary policies. We are now witnessing record fundraising and valuations in general across the market … [it] is on pace to top the record seen in 2019. This may be attributed to investors' continued appetite for additional yield compared to the relatively lower yields available in public equities, or the opportunity to invest in 'unicorn' start-up companies that may one day be the next multi-billion-dollar valuation investment."[35] Another article, from early November 2021, said that the S&P private equity index was up 43 percent "so far this year, as opposed to a 25 percent gain for the "benchmark S&P 500." The same article said that "Shares of the biggest private equity firms have surged as the U.S. economy rebounded with the easing of coronavirus restrictions" and that "Despite the looming threat of inflation, dealmakers expect the current pace of activity to continue, with hundreds of millions of dollars of management fees at stake for top industry executives."[36]

Risks to the capital gains forecast would appear weighted to the downside. With the Federal Reserve moving to end its asset-purchase program and telegraphing plans to increase short term interest rates in 2022, the withdrawal of "easy money" policies will be working to slow the economy and so indirectly tamping down equities prices. New variants of the coronavirus may also cause economic growth to slow. On the other hand, capital gains surprised to the upside in tax year 2020 despite the coronavirus and could do so again if the Fed manages to tame inflation without provoking a recession.

Rent, Royalty, Partnership, and S Corporation Gains

Partnership and S corporation income overtook capital gains income to become the second-largest income component after wages in three of the four tax years from 2016 to 2019, but with considerably less volatility than capital gains. However, capital gains income is expected to be larger than partnership and S corporation income throughout DOB's forecast period. But the two income concepts are of roughly similar magnitude.

While growing at an average 9.3 percent annually over its history, partnership and S corporation income growth has both generally slowed and become more volatile in the period since the Great Recession. Partnership and S corporation income jumped to 18.7 percent growth in 2017 then fell 8.4 percent in 2018 but was essentially flat in 2019, dipping 0.6 percent. DOB forecasts another decline, this time of 0.9 percent, in the 2020 pandemic year (based in part on incomplete

[34] Benchmark International, "U.S. Private Equity Sets Major Record for H1 2021," July 30, 2021, available at https://blog.benchmarkcorporate.com/u.s.-private-equity-sets-major-record-for-h1-2021.
[35] Adam Emig, "How Has Private Equity Performance Compared to Public Market Stocks During Covid?", November 1, 2021. Available at https://commercetrustcompany.com/news-and-insights/2021/how-has-private-equity-performance-compared-to-public-market-stocks-during-covid.
[36] Chibuike Oguh, "Private equity industry asks how long the boom will last," November 9, 2021, Reuters. Available at https://www.reuters.com/business/finance/private-equity-industry-asks-how-long-boom-will-last-2021-11-09/.

processing information), to be followed by growth of 17.3 percent in 2021 with growth slowing to a still-robust 12.2 percent in 2022. Smaller 6.5 percent growth is forecast for 2023.

Changes in Federal tax law play a significant role in the abrupt shifts in the growth of this component of income. For example, the growth of partnership and S corporation income in 2017 was the strongest since 1988. Although improved national and global economic growth played a role, a Federal law that dated back to the Great Recession crisis period appears to have had a strong effect on partnership income. Hedge fund managers who had deferred the receipt and recognition of certain management or incentive fees charged to offshore funds before January 1, 2009, were required to recognize these fees for tax purposes by the end of 2017. In order to determine the true underlying growth of partnership and S corporation income, this one-time income declaration would have to be removed from the 2017 base.

Partnership income is the largest contributor to this NYSAGI component, much of which originates within the finance and real estate industries. Another large contributor is income from S corporation ownership. Prior to the passage of the TCJA and its corporate tax rate cut, opting for S corporation status allowed firms to pass earnings through to a limited number of shareholders, avoiding corporate taxation while still enjoying the limited liability that corporate status affords.

Growth in income from partnerships and S corporations is related to both the economy and financial markets. However, average annual growth of 3.7 percent during the most recent expansion (through 2019) is lower, based on the strength of the economy and equity markets, than pre-recession relationships would suggest. Partnership and S corporation income gains and losses tend to rise and fall together, suggesting that the growth rates are linked at least in part to births and deaths of partnerships and S corporations. The severity of the Great Recession forced a large number of entities to exit the market, and tighter credit markets made it difficult for new entities to enter as economic conditions improved.

DOB's partnership and S corporation income forecast contains both upside and downside risks. Like capital gains income, partnership and S corporation income is sensitive to the performance of the private-equity sector and hedge funds, which can be very volatile. In addition, the real estate market is not captured independently in the forecast model. Since there is a high concentration of real estate partnerships in the State, a better-than-predicted real estate market (due to an improved employment situation and a decline in foreclosures) could lead to higher-than-expected partnership and S corporation gains. Conversely, a slowing real estate market could result in smaller than expected gains.

Dividend Income

Taxable dividend income is a highly volatile component of NYSAGI, as illustrated by a growth rate that has ranged from a drop of 28.7 percent in 2009 to a gain of 26.6 percent in 2004. The volatility has continued in the recent past, once again due, in part, to income shifting. For example, taxable dividend income grew 19.7 percent in 2014 sandwiched by 4.8 percent declines in 2013 and 2015. These growth rates were affected by early dividend payouts made in 2012 to avoid the higher tax rate in 2013, which in turn lowered the 2013 level of dividends and consequently resulted in a

higher growth rate for 2014. Growth of 9.8 percent in 2018 was just a bit lower than 2017's growth, but dividend income growth slipped to 8.6 percent in 2019. Based in part on partial processing information, dividend income fell 19.6 percent in 2020. DOB estimates that dividend income will increase 8.9 percent in 2021 and strengthen to a 9.6 rate of increase in 2002 before easing to 5.2 percent growth in 2023.

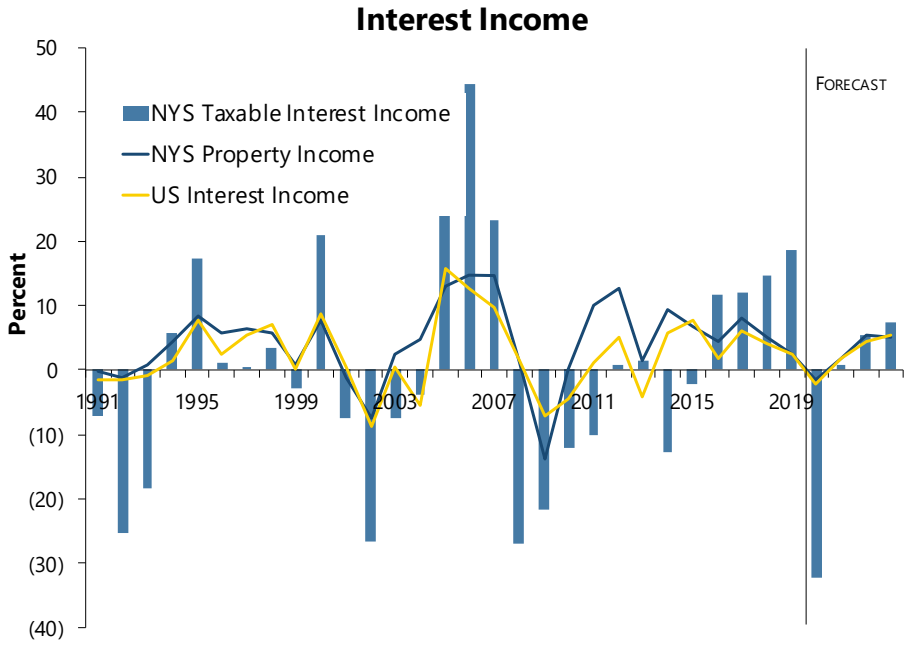
State taxable dividend income moves with dividend income in the national economy, a component of the NIPA definition of U.S. personal income. Other determinants include long-term interest rates, as represented by the 10-year Treasury yield, and the performance of equity markets. Despite the link to the national economy, State taxable dividends grow more slowly but are more variable than U.S. dividend income: they increased 6.4 percent on average between 1976 and 2019 with a standard deviation of 12.2 percentage points, while U.S. dividend income grew an average of 9.2 percent over the same period, with a standard deviation of 10.1 percentage points.

Risks to the dividend income forecast are closely linked to the risks embedded in the U.S. equity markets, corporate profitability, and the performance of publicly traded private equity firms.

Interest Income

From 2008 through 2015, taxable interest income for New York State filers either declined or posted very low growth (e.g., 0.7 percent and 1.5 percent increases in 2012 and 2013, respectively). Growth jumped to 11.6 percent in tax year 2016 as the Federal Reserve began increasing the target band for the federal funds rate in December 2015. After increasing 14.6 percent in 2018, interest income rose 18.5 percent in 2019, the fastest growth since 2007. But after the Federal Reserve cut the federal funds target range to zero to 0.25 percent – effectively zero – in March 2020 as part of its response to the coronavirus pandemic, preliminary processing information indicates that taxable interest income fell 32.4 percent in 2020. DOB expects growth of just 0.7 percent in 2021 as the Fed did not raise the target range for the federal funds rate and waited until close to the end of the year to begin reducing its asset-purchase program. With the Fed expected to end its asset purchases in early 2022, and to begin raising its target federal funds rate range, DOB anticipates that interest income will grow 5.4 percent that year, increasing to 7.4 percent growth in 2023.

For a given amount of assets, an increase in interest rates will increase interest income. In addition, NYS property income, a component of the NIPA definition of state personal income that includes interest income, is a good indicator of the trend in State taxable interest income, despite being much less volatile (see below). Note that from 1977 to 2019 the standard deviation of the annual growth of NYS property income was 6.6 percentage points, while the standard deviation for the growth rate of U.S. interest income, a part of the NIPA definition of U.S. personal income, was 7.4 percentage points. In contrast, State taxable interest income annual growth had a standard deviation of 17.0 percentage points. The additional volatility in this component of NYSAGI could be related to the behavioral response of State taxpayers to past changes in tax law.



Note: 2020 NYS taxable interest income is preliminary.
Source: Moody's Analytics; NYS DTF; DOB staff estimates.

Risks to the interest income forecast are linked to the Federal Reserve's monetary policy. Despite the Federal Reserve's new framework for monetary policy, which includes a willingness to overshoot its long-run 2 percent inflation target for some period of time, the magnitude and persistence of inflation during 2021 has been a surprise to policymakers. With the Fed now poised to begin raising short-term interest rates, there appears to be little downside risk to the forecast for taxable interest income.

Small Business and Farm Income

This NYSAGI component contains income from operating a business, practicing a profession as a sole proprietor, or operating a farm. It is expected to vary with the overall strength of the national and State economies, with some volatility deriving from income shifting. Growth surged to 7.8 percent in 2017, the fastest in 11 years, but it fell 1.2 percent in tax year 2018 before strengthening to 2.4 percent in 2019. Some income-shifting likely occurred over the 2016-2018 period, as the incoming Trump administration raised expectations in late 2016 and early 2017 for rapid changes in Federal tax law, though the new law was not enacted until December 2017. Thanks in large part to restrictions on business activity due to the onset of COVID-19, incomplete processing information indicates that small business and farm income fell 16.8 percent in tax year 2020. That is the worst decline in DOB's history of the series. However, DOB anticipates a strong recovery to 11.7 percent growth in 2021 before slowing to 7.6 percent growth in 2022 as the recovery matures. Growth of 6.6 percent is forecast for 2023.

Small business and farm income growth and volatility have both fallen over the years. This component of taxable income grew at an annual average rate of 11.5 percent from 1980 to 1990

with a standard deviation of 10.8 percentage points. However, between 1991 and 2019 it grew only at an annual average rate of 3.8 percent, with a standard deviation of 4.4 percentage points. Proprietors' income, as defined under NIPA, experienced similar changes in growth, falling from 10.5 percent growth to 4.9 percent annual average growth over the two periods; however, the standard deviation of growth increased, from 8.4 percentage points in the earlier period to 10.5 percentage points from 1991 to 2019.

Risks to the forecast of business income are closely linked to the risks to the overall economic forecast as sole proprietors' income is particularly responsive to the state of the business cycle. Of course, consumers becoming more comfortable with in-person shopping and resuming dining out as the pandemic recedes would represent an upside risk to the forecast. Also, since agriculture nationwide has been a particular victim of the trade wars, in spite of Federal attempts to support farmers' income, an easing of trade tensions would constitute an upside risk to the forecast.

Pension Income

Growth in pension income in the near term is expected to remain well below its longer-term average growth (9.7 percent over 1981-2019). Growth was 2.8 percent for tax year 2019 and partial processing information shows slower growth of 1.6 percent for 2020. DOB expects growth to be about flat over the next three tax years, with a 2.0 percent increase in 2021 being followed by increases of 1.8 percent and 2.3 percent in 2022 and 2023, respectively.

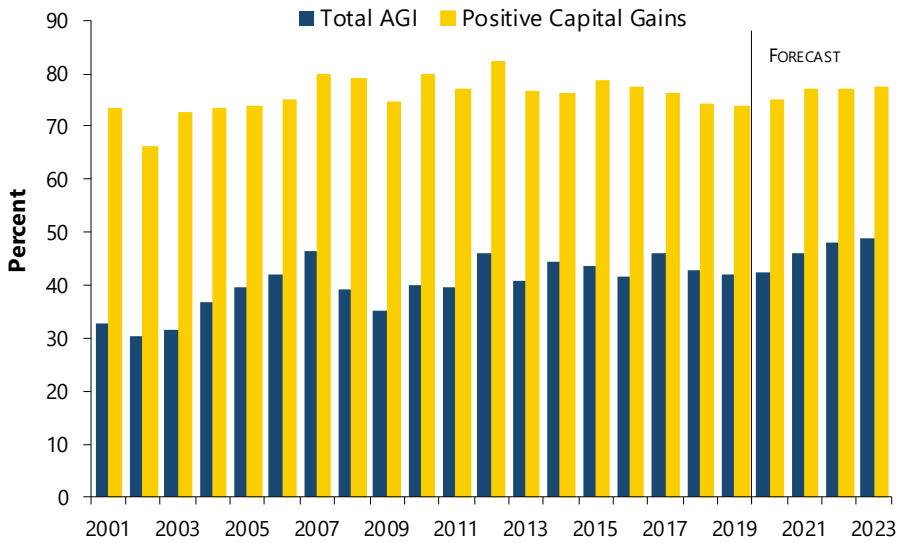
Pension income, which includes payments from retirement plans, life insurance annuity contracts, profit-sharing plans, military retirement pay, and employee savings plans, is linked to prior-year long-term interest rates, suggesting that firms base the level of pension and life insurance benefits they offer to employees on their expectations of future profitability, which in turn is tied to the future strength of the economy. The growth rate of pension income has declined considerably over time, from average annual growth of 12.6 percent over 1980-1990 to 6.3 percent growth over 1991-2013. This coincides with the decline in the average 10-year Treasury yield from 10.4 percent in the former period to 4.9 percent in the latter. Both declines are likely the result of lower inflation rates in the later period.

Long-term Treasury yields fell continuously from a local high of 6.0 percent in 2000 to 1.8 percent in 2012 due to highly accommodative monetary policy both in the U.S. and abroad as economies were slow to recover from the two recessions over this period. Yields were around 2.5 percent in 2013 and 2014 but fell to 1.8 percent in 2016. As the Federal Reserve began sustained increases in the target range for the federal funds rate, yields increased to 2.3 percent and 2.9 percent in 2017 and 2018, respectively. With the Federal Reserve reversing course in 2019 and returning to a near-zero federal funds rate target in 2020 in response to the COVID-19 pandemic, the 10-year rate fell to 0.9 percent in 2020 from 2.1 percent in 2019. DOB projects that the rate will be 1.4 percent in 2021 and 2.0 percent in 2022, with a further increase to 2.7 percent in 2023 as the Fed continues to increase its federal funds rate target. Pension income should follow in the wake of these increases.

The risks to the forecast for pension income are related mainly to the risks to long-term interest rates. As the economy has recovered more quickly from the COVID-19 shock and with more persistent and higher inflation than was expected, upside risk to the pension income forecast seems dominant, since it appears the Fed will be raising interest rates faster than believed previously.

Changes in the State Distribution of Income and Revenue Risk

Income Shares of the Top One Percent Taxpayers
AGI and Capital Gains Realizations



Note: For nonresident taxpayers, shares are based on total income.
Source: NYS DTF, DOB staff estimates.

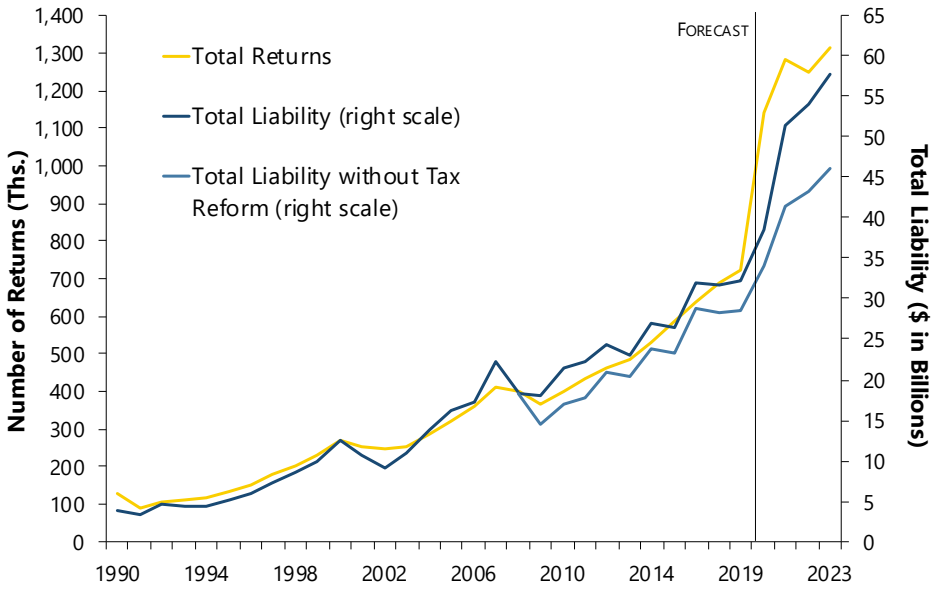
The most volatile components of taxable income, such as bonuses and capital gains realizations, are highly concentrated among the State's highest-income taxpayers. The top one percent of taxpayers, as determined by their NYSAGI, accounted for 45.9 percent of adjusted gross income in 2017, the highest proportion since tax year 2012, and also accounted for 76.2 percent of capital gains realizations that year (see figure above). Both shares declined over the next two years, reaching 42.1 percent for NYSAGI and 73.6 percent for capital gains in 2019. Partial processing information for tax year 2020 puts the income share at 42.6 percent and the capital gains share at 75.1 percent. Going forward, DOB projects that the share of AGI among the top one percent of filers will rise to 46.1 percent in 2021 while the share of realized capital gains will be 75.1 percent. DOB anticipates NYSAGI shares of 48.2 percent and 48.7 percent in 2022 and 2023, respectively, with capital gains shares of 77.2 percent and 77.3 percent in those two years.

Note that at the recent peak (in 2012), the shares of these filers represented 45.9 percent of NYSAGI and 82.2 percent of realized capital gains. This was approximately where this very small number of taxpayers was in 2007, just prior to the Great Recession, when they accounted for 46.2 percent of NYSAGI and 80.0 percent of capital gains realizations. But these filers are not immune

to economic fluctuations. In 2009 their NYSAGI share had fallen to 35.4 percent while the share of capital gains was 74.7 percent.

Between 1985 and 2007 (or prior to the Great Recession), the number of returns generated by high-income taxpayers – those reporting NYSAGI of $200,000 or more – grew at an average annual rate of 12.8 percent. During the same period, the liability generated by these taxpayers grew somewhat more rapidly, at an annual average rate of 14.2 percent (see figure below). As the economy recovered after 2009, returns and tax liability for wealthier taxpayers also rebounded. The number of high-income filers increased 97.2 percent (or nearly doubled) from 2009 to 2019 while liability for these taxpayers increased 77.3 percent. Note that liability during this period was also affected by a temporary tax measure that added two more tax brackets for wealthier taxpayers, raising the State's top income tax rate to 8.97 percent for Tax Years 2009 to 2011, from 6.85 percent. A top rate of 8.82 percent for State taxpayers has been in place since 2012. The figure below indicates at least two instances of income shifting: 1) between 2012 and 2013 and 2) between 2016 and 2017. Finally, the pandemic appears to have had no effect on either the number of high-income filers or their liability in tax year 2020, based on preliminary processing information, though DOB does project a decline in the number of such filers in 2023. High-income liability is spurred upward in tax year 2021 and beyond in part due to the enactment of three new tax brackets and rates (9.65 percent, 10.3 percent, and 10.9 percent) in 2021. But note that liability also rises in the absence of the tax reform and without the higher rates.

New York State High-Income Tax Returns



Note: High-income taxpayers are those reporting NYSAGI of $200,000 or more.
Source: NYS DTF, DOB staff estimates.

The large decline in capital gains realizations (and thus NYSAGI) brought about by the Great Recession temporarily unwound some of the concentration of income and the share of high-income filers dropped to 3.8 percent in 2009 from 4.2 percent in 2007, but by 2011 the share of

returns was at 4.4 percent and continued a steady climb since, reaching 6.7 percent by tax year 2019, the last year for which complete information is available. The high-income share for tax year 2020 is estimated to be 10.4 percent, based in part on processing information. New, higher tax brackets and rates help induce shares of 11.6 percent, 10.9 percent, and 11.3 percent in forecast years 2021, 2022 and 2023, respectively.

Meanwhile, the liability share of high-income filers climbed to 63.2 percent in 2007 (a peak at the time) before falling to 57.9 percent the next year as the Great Recession took hold. While the share remained near that value in 2009, in the absence of the temporary top rates enacted for tax years 2009-2011 it would have been at 52.7 percent instead. By 2012 the liability share had exceeded the prior peak, reaching 63.9 percent, aided by economic growth and the 8.82 percent top rate under the reform law passed in December 2011 (see figure below). The 8.82 percent rate was maintained even as a multiyear middle-class tax cut began in tax year 2018. Note that data for tax year 2017 show a new peak of 66.5 percent under the reform law but also that the share slips to 64.8 percent by 2019 (at least in part because some filers in this category are included in the middle-class tax cut). Incomplete processing information indicates that the share jumped to 72.7 percent in tax year 2020, despite the pandemic, while the influence of the new brackets and rates can be seen in the expected 77.1 percent, 77.9 percent and 78.8 percent shares in Tax Years 2021, 2022 and 2023, respectively.

NYSAGI exhibits more volatility than does State personal income, while tax liability is more volatile than NYSAGI. See the box below for a comparison of three important indicators of the State's PIT base and a discussion of their respective volatilities, while the chart at the beginning of this section provides a visual illustration.

INCOME TAX LIABILITY AND ALTERNATIVE MEASURES OF INCOME

A major focus of DOB's forecasting effort is an accurate projection of PIT receipts. This requires estimates of income tax liability, which depends on taxpayer income. New York State tax law determines the components of income to be taxed and the corresponding tax rates.

PIT liability is the amount which State taxpayers actually owe for a given tax year and thus measures the State's tax base. [37]It is derived from taxpayers' NYSAGI, in conformity with State tax law. A measure that is closely related to NYSAGI is State personal income, a BEA NIPA concept that measures income derived from value added to current production.[38] This widely available data source is often used as a proxy for NYSAGI. The relative volatility of PIT liability, NYSAGI, and State personal income is presented in the first figure of this section. For example, in 2014, personal income grew 4.2 percent, while NYSAGI grew a stronger 8.7 percent and PIT liability under constant law grew an even stronger 11.3 percent.

Economists use the concept of elasticity to measure the sensitivity of one economic indicator to another. Elasticity is defined as the percentage change in one economic indicator when another changes by one percent. Since tax revenues tend to vary with the business cycle, we are often interested in the elasticity of the tax base with respect to a broad measure of economic conditions, such as GDP. The more sensitive a particular tax base measure is to a change in GDP, the higher the elasticity.

Typically, the elasticity of NYSAGI tends to be higher than that of personal income as NYSAGI measures the taxable components of income, which include realized capital gains and losses. Gains and losses earned on changes in asset prices are not included in the NIPA concept of personal income since they do not represent changes to the value of current production.[39] Unlike the primary drivers of personal income – employment and wages, which have relatively stable bases – income from capital gains realizations can rise and fall dramatically. In an asset market downturn such as occurred in 2008, for example, taxpayers can refrain from selling, which caused a 51.8 percent decline in capital gains realizations. In addition to behavioral responses to changes in market conditions, NYSAGI fluctuations can result from statutory changes and taxpayers' strategic responses to such changes. Taxpayers realized capital gains and received compensation early to avoid higher tax rates in 2013, shifting taxable income from 2013 into 2012, for example.

Personal income tax liability is even more elastic than NYSAGI, primarily because of the progressivity of the State tax system. The volatile components of taxable income, such as bonuses and capital gains realizations, tend to be concentrated among the State's high-income taxpayers, who are also taxed at the highest marginal tax rate. As the more-volatile income components respond strongly to changing economic conditions, the effective or average tax rate changes. Furthermore, as incomes rise, some taxpayers move into higher income tax brackets, increasing the effective tax rate and the amount of liability generated from a given amount of adjusted gross income. The opposite occurs as incomes fall. For example, the average effective tax rate fell from a high of 4.8 percent in 2000 to a low of 4.5 percent in 2002 without any significant changes in tax law. This impact is exacerbated in New York by provisions in State laws that recapture the benefits of portions of income being taxed at lower rates for high income taxpayers.

The fact that the most volatile components of income often account for a large portion of the change in NYSAGI poses significant risks to DOB's PIT forecast. Therefore, DOB has consistently maintained that cautious projections are warranted.

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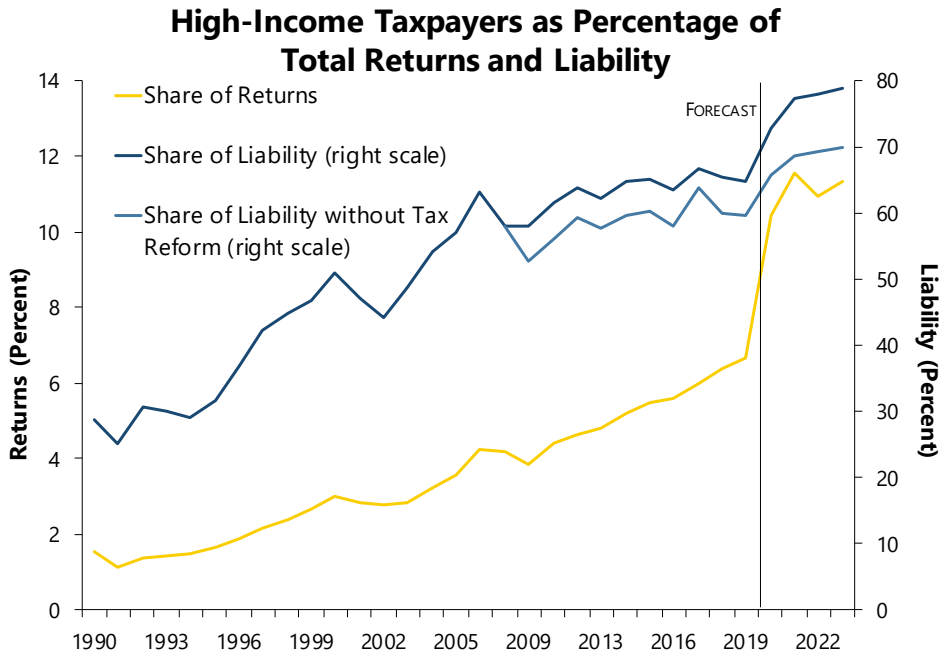
[37] For a detailed discussion of personal income tax liability, see "Personal Income Tax" in the "Receipts Explanation" part of this document.

[38] For a detailed explanation of how the DOB constructs State personal income, see the FY 2020 Economic and Revenue Outlook, p.93, located at https://www.budget.ny.gov/pubs/archive/fy20/exec/ero/fy20ero.pdf

[39] However, any transaction cost generated by such a sale would add value to current production and would therefore be included in personal income.



Note: High-income taxpayers are those reporting NYSAGI of $200,000 or more. Source: NYS Department of Taxation and Finance; DOB staff estimates.

The table below shows the changes in the concentration of income and liability from the pre-Great Recession peak in 2007 to the trough in 2009, and in 2019. The table is restricted to full-year resident filers only. Tax year 2019 is used because processing information for 2020 is unusually incomplete due to the extended deadline to file final returns that was granted to many filers as a result of natural disasters that struck the State.

The share of nonwage income accruing to the top 10 percent of taxpayers fell by 10.0 percentage points between 2007 and 2009, a result of the Great Recession; but even in 2019, this group's nonwage income share did not exceed its 2007 share (68.7 percent versus 75.6 percent in 2007). For wage income, which is more evenly distributed across taxpayers, the share of the top 10 percent of taxpayers fell 1.4 percentage points between 2007 and 2009, but in 2019 the 45.2 percent share remained beneath the 46.0 percent share of 2007. One indication of the severity of the Great Recession can be seen in the fact that even as late as 2019, the shares of NYSAGI, wage income, nonwage income and liability were still generally lower than their counterparts in 2007, even among the most affluent resident tax filers.

THE CONCENTRATION OF STATE INCOME AND LIABILITY
2007, 2009, and 2019

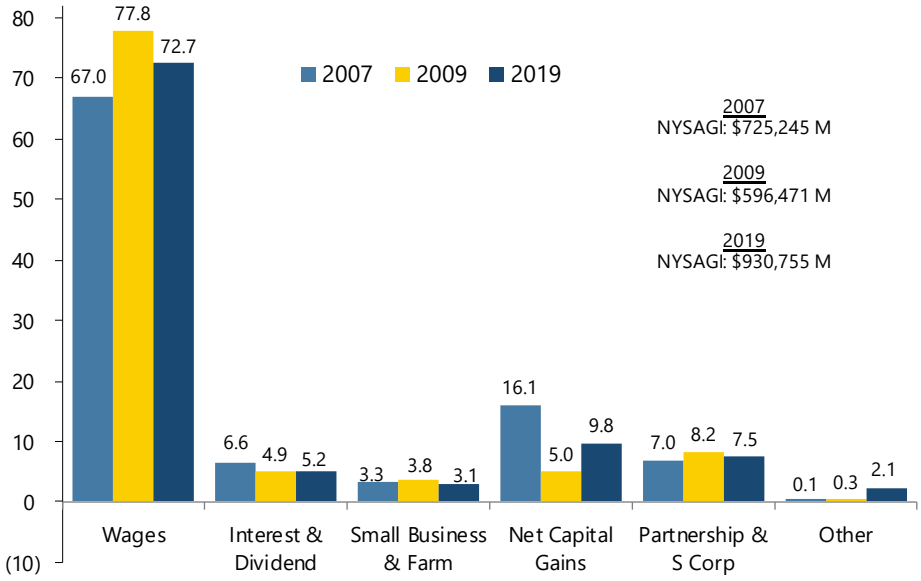
	Number of Returns	NYSAGI	Wage Income	Nonwage Income	Liability
2007					
Total ($ in millions)	8,706,284	$631,690	$412,138	$270,354	$29,635
Share: Top 1%	–	36.4	18.0	59.2	47.7
Share: Top 5%	–	51.1	33.9	71.0	65.9
Share: Top 10%	–	60.6	46.0	75.6	76.4
Share: Top 25%	–	77.9	69.3	83.1	92.0
2009					
Total ($ in millions)	8,585,978	$520,154	$401,419	$167,410	$25,908
Share: Top 1%	–	27.1	15.1	49.2	43.1
Share: Top 5%	–	42.9	31.5	60.8	61.8
Share: Top 10%	–	54.1	44.6	65.6	73.5
Share: Top 25%	–	75.1	69.4	74.8	91.5
2019					
Total ($ in millions)	9,493,921	$801,987	$570,899	$294,469	$41,206
Share: Top 1%	–	29.3	15.0	50.1	42.2
Share: Top 5%	–	45.9	32.3	63.2	60.9
Share: Top 10%	–	56.7	45.2	68.7	72.0
Share: Top 25%	–	75.7	68.9	77.7	88.9

Note: Returns are ranked on the basis of NYSAGI. Returns are full-year resident only.
Data for 2007 and 2009 are based on a weighted statistical sample of all State returns.
Source: NYS DTF; DOB staff estimates.

The following figures illustrate the decomposition of NYSAGI into its main components for the 2007 peak year, the 2009 trough year, and for 2019 (the most recent complete year), for all taxpayers and for high-income taxpayers, defined here as those reporting NYSAGI of $200,000 or more.

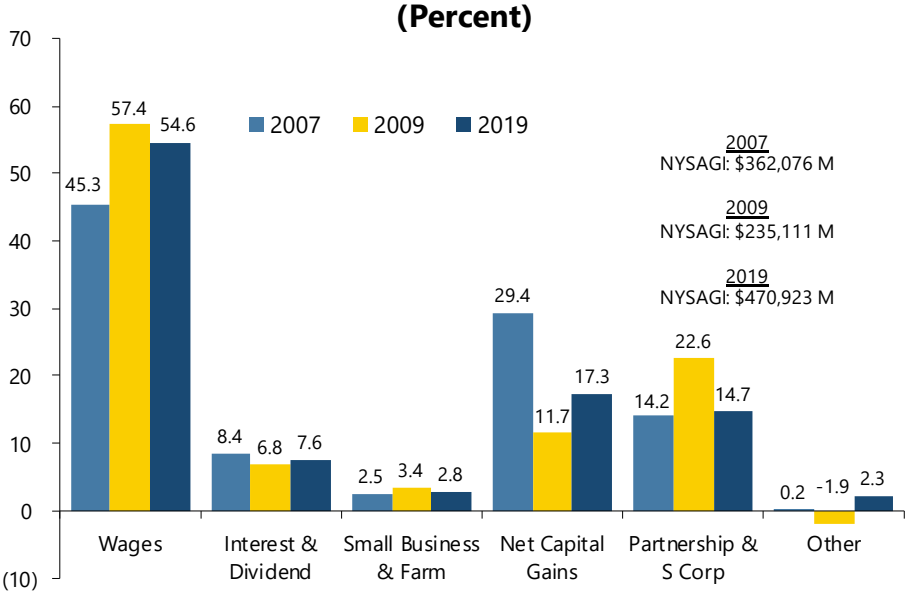
The shares of NYSAGI for 2019 for all filers resemble those of 2007 somewhat more closely, though there are some interesting divergences. At 72.7 percent, the wage income share is about halfway between the 2007 and 2009 shares, and the 2019 share of business and farm income is more like that of 2007. Partnership income, at 7.5 percent, is a larger share than in 2007 while the residual "other" income category, a negligible 0.1 percent in 2007, now accounts for 2.1 percent of NYSAGI. This reflects in part the increasingly older State population since the "other" category contains taxable pensions, alimony, IRA income, and other such components. The share from interest and dividends has fallen from its 2007 share, likely in part for reasons already discussed. While net capital gains in 2019 are nearly double their 2009 share, when the economy began to emerge from the Great Recession, at 9.8 percent they remain well below their 2007 share.

Composition of NYSAGI for All Taxpayers (Percent)



Note: Capital gains and partnership/S corporation gains income are net of losses.
Source: NYS DTF; DOB staff estimates.

Composition of NYSAGI for High-Income Taxpayers (Percent)



Note: Both capital gains and partnership/S corporation gains income are net of losses. High-income taxpayers are those reporting NYSAGI of $200,000 or more.
Source: NYS DTF; DOB staff estimates.

What is striking about the chart for the high-income filers is the extent to which they remain more dependent upon wage income rather than capital gains income. Prior to the Great Recession wage income accounted for 45.3 percent of their NYSAGI; in 2019, it made up 54.6 percent of NYSAGI and its share is just 2.8 percentage points lower than the 2009 share. The 2019 share of net capital gains is just over 12 percentage points lower than it was in 2007. The "other" income category is a much larger share at 2.3 percent than it was in 2007 (0.2 percent). The share of dividend and interest income is almost a percentage point higher than it was in 2009, while the share of partnership and S corporation income in 2019 is similar to that in 2007 and much lower than the 2009 share.

Some of the large changes in income shares brought about by the Great Recession do not appear to have been unwound yet, despite the passage of more than 10 years since it officially ended, testifying to the weak nature of the recovery that followed. In particular, both high-income filers and taxpayers overall remain more dependent on wage income now than in 2007 (and more strikingly so for the high-income taxpayers) while the share of NYSAGI made up of net capital gains income, which in 2007 was more than twice that of the partnership income share, is now much more similar to the latter. It remains to be seen what effects the COVID-19 recession will have on the distribution of AGI income components in the coming years.

Risks to the Forecast

DOB's forecast for PIT provides a balanced picture of upside and downside risks, particularly with respect to its most volatile components. As forecasts of the components of NYSAGI are consistent with economic variables from DOB's macroeconomic forecasting models, much of the risks to PIT are the same as the risks to the State and national economies. However, the risks and uncertainties are heightened in the case of taxable income, because of the prominence of bonus income and capital gains realizations, and even more so for PIT revenues, as a consequence of the State's progressive tax system.

Selected Economic Indicators

SELECTED ECONOMIC INDICATORS (Calendar Year)	2020 (actual[40])	2021 (estimate)	2022 (forecast)	2023 (forecast)	2024 (forecast)	2025 (forecast)
U.S. Indicators[41]						
Gross Domestic Product (current dollars)	(2.2)	9.9	7.9	4.9	4.5	4.5
Gross Domestic Product	(3.4)	5.6	4.3	2.7	2.3	2.4
Consumption	(3.8)	8.1	4.0	2.5	2.3	2.4
Residential Fixed Investment	6.8	8.8	(3.6)	0.9	2.1	2.8
Nonresidential Fixed Investment	(5.4)	7.5	4.1	4.2	3.8	3.7
Change in Inventories (dollars)	(42.3)	(75.0)	110.0	96.0	67.3	65.5
Exports	(13.6)	4.0	5.8	6.2	4.8	4.3
Imports	(8.9)	13.1	4.2	3.4	3.3	3.3
Government Spending	2.5	0.6	1.2	1.4	0.9	0.8
Corporate Profits[42]	(5.2)	25.4	4.4	2.1	3.4	3.5
Personal Income	6.5	7.2	1.1	4.5	4.7	4.5
Wages	1.3	9.1	7.4	4.9	4.7	4.4
Nonfarm Employment	(5.7)	2.7	3.5	1.9	1.3	1.0
Unemployment Rate (percent)	8.1	5.4	3.8	3.5	3.5	3.7
S&P 500 Stock Price Index	10.5	32.6	7.4	(2.7)	0.6	1.3
Federal Funds Rate	0.4	0.1	0.3	1.2	1.9	2.5
10-year Treasury Yield	0.9	1.4	2.0	2.7	3.2	3.7
Consumer Price Index	1.2	4.6	4.1	2.3	2.1	2.2
New York State Indicators						
Personal Income[43]	6.1	5.4	(1.0)	4.3	4.6	4.4
Wages and Salaries[43]						
Total	(0.7)	8.4	5.0	4.0	4.2	4.0
Without Bonus[44]	(3.3)	6.9	6.9	4.7	4.2	3.9
Bonus[44]	18.4	17.5	(5.8)	(0.5)	4.4	4.4
Finance and Insurance Bonuses[44]	12.9	18.6	1.8	(3.0)	4.2	4.2
Wage Per Employee	9.9	6.1	(0.6)	2.2	3.0	3.1
Property Income	(1.4)	1.5	5.5	5.2	4.7	4.6
Proprietors' Income	(1.5)	6.8	6.9	5.5	4.8	5.1
Transfer Income	40.3	3.2	(22.6)	3.1	4.9	4.7
Nonfarm Employment[43]						
Total	(10.0)	2.5	5.6	1.7	1.2	0.9
Private	(11.2)	3.2	6.3	1.9	1.4	1.0
Unemployment Rate (percent)	10.1	7.3	5.3	4.7	4.7	4.7
Composite CPI of New York State[44]	1.5	3.7	3.8	2.4	2.2	2.2
New York State Adjusted Gross Income						
Capital Gains	27.4	48.0	12.8	7.0	2.6	3.5
Partnership/ S Corporation Gains	(0.9)	17.3	12.2	6.5	6.2	6.6
Business and Farm Income	(16.8)	11.7	7.6	6.6	5.7	5.9
Interest Income	(32.4)	0.7	5.4	7.4	6.5	5.9
Dividends	(19.6)	8.9	9.6	5.2	6.2	6.3
Total NYSAGI	**3.3**	**13.6**	**3.8**	**4.7**	**4.1**	**4.2**

Source: Haver Analytics; Moody's Analytics; NYS DOL; NYS DTF; DOB staff estimates.

[40] For NYSAGI variables, 2020 is preliminary.
[41] All indicators are percent changes except change in inventories, the unemployment rate, and interest rates; all GDP components refer to chained 2012 dollars, unless otherwise noted.
[42] Includes inventory valuation and capital consumption adjustments.
[43] Nonfarm employment, wage, and personal income numbers are based on QCEW data.
[44] Series created by DOB.

SELECTED ECONOMIC INDICATORS (State Fiscal Year)	FY 2021 (actual)	FY 2022 (estimate)	FY 2023 (forecast)	FY 2024 (forecast)	FY 2025 (forecast)	FY 2026 (forecast)
U.S. Indicators[45]						
Gross Domestic Product (current dollars)	(2.1)	11.7	6.8	4.7	4.5	4.5
Gross Domestic Product	(3.4)	6.7	3.9	2.4	2.3	2.4
Consumption	(3.3)	9.0	3.2	2.4	2.3	2.4
Residential Fixed Investment	8.6	3.3	(1.9)	1.3	2.3	2.9
Nonresidential Fixed Investment	(5.0)	8.3	4.1	4.1	3.8	3.7
Change in Inventories (dollars)	(56.8)	(37.9)	125.0	83.5	66.2	65.5
Exports	(14.3)	7.3	6.6	5.6	4.7	4.2
Imports	(6.2)	12.6	3.9	3.3	3.3	3.3
Government Spending	1.9	0.3	1.6	1.2	0.9	0.7
Corporate Profits[46]	0.1	24.3	1.3	2.6	3.5	3.6
Personal Income	9.7	2.1	3.3	4.6	4.7	4.4
Wages	1.0	10.9	6.2	4.8	4.6	4.3
Nonfarm Employment	(7.4)	5.4	2.9	1.7	1.3	1.0
Unemployment Rate (percent)	8.7	4.9	3.7	3.5	3.6	3.7
S&P 500 Stock Price Index	13.9	30.4	1.8	(1.7)	0.8	1.4
Federal Funds Rate	0.1	0.1	0.5	1.4	2.1	2.6
10-year Treasury Yield	0.9	1.5	2.2	2.8	3.4	3.8
Consumer Price Index	1.2	5.7	3.2	2.2	2.1	2.2
New York State Indicators						
Personal Income[47]	8.5	1.0	1.1	4.5	4.5	4.4
Wages and Salaries[47]						
Total	(2.0)	11.4	3.2	4.4	4.2	4.0
Without Bonus[48]	(4.8)	9.9	6.3	4.4	4.1	3.9
Bonus[48]	18.1	19.8	(13.3)	4.4	4.4	4.4
Finance and Insurance Bonuses[48]	20.2	16.2	(9.9)	4.2	4.2	4.2
Wage Per Employee	11.9	4.0	(1.1)	2.9	3.0	3.1
Property Income	(2.1)	3.2	5.7	5.0	4.7	4.6
Proprietors' Income	(0.6)	8.8	6.0	5.1	4.9	5.1
Transfer Income	59.0	(21.5)	(11.1)	4.0	4.9	4.7
Nonfarm Employment[47]						
Total	(12.6)	7.2	4.5	1.4	1.1	0.9
Private	(14.0)	8.4	5.0	1.6	1.2	1.0
Unemployment Rate (percent)	11.3	6.5	5.1	4.7	4.7	4.7
Composite CPI of New York[48]	1.3	4.7	3.0	2.3	2.2	2.3

Source: Haver Analytics; Moody's Analytics; NYS DOL; DOB staff estimates.

[45] All indicators are percent changes except change in inventories, the unemployment rate, and interest rates; all GDP components refer to chained 2012 dollars, unless otherwise noted.
[46] Includes inventory valuation and capital consumption adjustments.
[47] Nonfarm employment, wage, and personal income numbers are based on QCEW data.
[48] Series created by DOB.

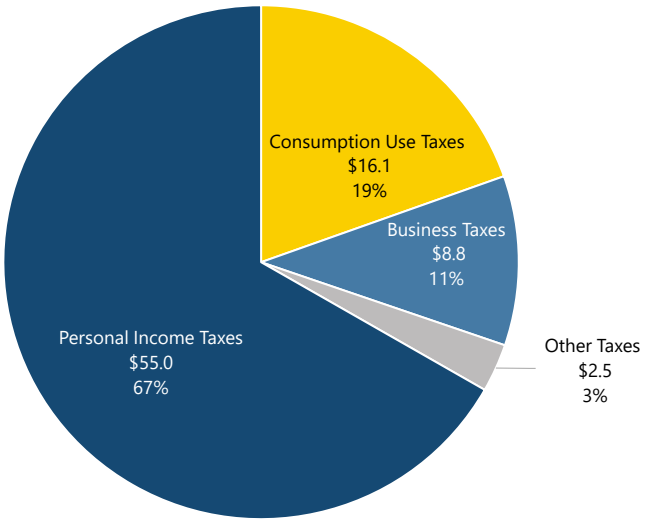
RECEIPTS EXPLANATION

Receipts Overview

The Receipts Explanation part of this volume is presented in smaller sections that group receipts source chapters together by receipts category.

- Personal Income Tax – the largest receipts source.
- Consumption/Use Taxes – includes chapters on the alcoholic beverage taxes, auto rental tax, cigarette and tobacco tax, highway use tax, medical cannabis tax, motor fuel tax, opioid excise tax, sales and use tax, and vapor products tax.
- Business Taxes – includes chapters on corporation franchise taxes, corporation and utilities taxes, insurance taxes, the pass-through entity tax, and the petroleum business tax.
- Gaming and Other Taxes – includes chapters on authorized combative sports tax, employer compensation expense program, estate tax, gaming receipts, pari-mutuel tax and real estate transfer tax.

FY 2021 Tax Receipts Cash Basis
All Funds - $82.3 Billion



Revenue Actions

All receipts forecasts in this volume are inclusive of any associated actions listed in the *Revenue Actions* section of the *Executive Budget Briefing Book.* The accompanying table summarizes those

actions organized by receipt category, rather than by type of action. The incremental All Funds revenue gain or loss from the proposed action is included (millions of dollars) and represents gross revenue adds and reductions without any adjustments for associated spending changes, movements across funds, or General Fund spending offsets. For more detailed explanations of these actions, please refer to the *Executive Budget Briefing Book*.

ALL FUNDS LEGISLATION (millions of dollars)	FY 2023	FY 2024	FY 2025	FY 2026
Personal Income Tax	**(2,462)**	**(694)**	**(448)**	**(159)**
Accelerate the Implementation of the Middle-Class Tax Cut	(162)	(615)	(360)	(44)
Create and Expand Tax Credits for Farms	-	(16)	(16)	(43)
Provide Small Business Tax Relief	(100)	(100)	(100)	(100)
Provide a Homeowner Tax Rebate Credit	(2,200)	-	-	-
Extend the Clean Heating Fuel Credit for Three Years	-	-	(6)	(6)
Extend the Alternative Fuels and Electric Vehicle Recharging Property Credit for Five Years	-	-	(3)	(3)
Create a Tax Exemption for Student Loan Forgiveness Awards	-	(1)	(1)	(1)
Enact STAR Administrative Reforms	-	-	-	-
Require S-Corporation Conformity with Federal Return	-	13	13	13
Streamline the Withholding Table and Quarterly Interest Rate Publication Process	-	-	-	-
Expand the Financial Institution Data Management Program	-	25	25	25
Consumption/Use Taxes	**22**	**43**	**43**	**43**
Modernize Tax Law to Include the Vacation Rental Industry	22	43	43	43
Make Local Sales Tax Rate Authorizations Permanent	-	-	-	-
Business Taxes	**(1)**	**(359)**	**(11)**	**(1)**
Create a Tax Credit for Small Businesses COVID-19-Related Expenses	-	(250)	-	-
Extend the New York City Musical and Theatrical Production Tax Credit	-	(100)	-	-
Extend the Credit for Companies Who Provide Transportation to Individuals with Disabilities for an Additional Six Years	-	-	(1)	(1)
Extend the New York Youth Jobs Program Tax Credit for an Additional Five Years	-	-	(40)	(40)
Extend the Empire State Apprenticeship Tax Credit for an Additional Five Years	-	-	(10)	(10)
Extend the Film Tax Credit for Three Years	-	-	-	-
Extend and Enhance the Brownfields Program	-	-	-	-
Extend the Credit for Employment of Persons with Disabilities for Six Years	-	-	(1)	(1)
Increase the Aggregate Dollar Amount of the Low-Income Housing Credits	-	(7)	(14)	(21)
Extend and Enhance the Hire-A-Vet Credit for Three Years	-	-	(1)	(1)
Provide Tax Credits for the Phase Out of a Certain Grade of Fuel Oil	-	-	(17)	-
Eliminate the Investment Tax Credit for Production of Master Tapes	-	-	75	75
Establish a Permanent Rate for the Article 9-A MTA Surcharge	-	-	-	-
Exempt Certain Water Vessels from the Petroleum Business Tax	(1)	(2)	(2)	(2)
Other Actions	**5**	**20**	**20**	**20**
Extend the Telecommunications Assessment Ceiling Program for Four Years	-	-	-	-
Solar and Wind Valuation Program Technical Corrections	-	-	-	-
Authorize Casino Licenses	-	-	-	-
Extend Pari-Mutuel Tax Rates and Simulcast Provisions for One Year	-	-	-	-
Extend Authorized Use of Capital Funds by Certain Off-Track Betting Corporations for One Year	-	-	-	-
Extend the Waste Tire Management Fee for Five Years	5	20	20	20
TOTAL ALL FUNDS LEGISLATION	**(2,436)**	**(990)**	**(396)**	**(97)**

Supplementary Supporting Documentation

In addition to the FY 2023 Executive Budget publications, the following publications provide further detail, history, or context to the various intricacies of the State's tax infrastructure.

- The ***Economic, Revenue, and Spending Methodologies*** [49] provide a comprehensive review of the methods used by DOB in determining the economic and tax receipt projections.

- The ***Annual Information Statement and Financial Disclosure*** [50] is the State's principal means for disclosing the financial information required to meet its legal obligations under federal securities law. To that end, the Statement provides: the Enacted Budget Financial Plan; actual operating results for the prior three fiscal years; economic and demographic data; debt and other capital financing information; State government organization, workforce, pension systems, and financial procedures; certain public authorities and localities for which the State has a significant oversight or financial role; and material litigation against the State.

- Published in conjunction with DTF, the annual report on ***New York State Tax Expenditures***[51] provides descriptions, cost estimates, and effective dates of State tax expenditures, including those contained within the FY 2023 Executive Budget.

[49] https://www.budget.ny.gov/pubs/archive/fy22/fy22-methodology-report.pdf
[50] https://www.budget.ny.gov/pubs/archive/fy22/ais/2021-ais.pdf
[51] https://www.budget.ny.gov/pubs/archive/fy22/ex/ter/fy22ter.pdf

Personal Income Tax

PERSONAL INCOME TAX
(millions of dollars)

		FY 2021 Results	FY 2022 Estimated	Change Dollar	Change Percent	FY 2023 Projected	Change Dollar	Change Percent
Withholding		44,218	51,495	7,277	16.5	51,638	143	0.3
Estimated Payments	Current Year	10,930	14,458	3,528	32.3	4,444	(10,014)	(69.3)
	Prior Year[1]	5,512	7,537	2,026	36.8	5,958	(1,579)	(20.9)
	Total	16,441	21,995	5,554	33.8	10,402	(11,593)	(52.7)
Final Returns	Current Year	402	331	(71)	(17.7)	346	15	4.5
	Prior Year[1]	3,170	4,051	881	27.8	4,318	267	6.6
	Total	3,572	4,382	810	22.7	4,664	282	6.4
Delinquent		1,300	1,483	183	14.0	1,533	50	3.4
	Gross Receipts	**65,532**	**79,355**	**13,823**	**21.1**	**68,237**	**(11,118)**	**(14.0)**
Refunds	Prior Year[1]	6,048	5,487	(561)	(9.3)	11,039	5,552	101.2
	Previous Years	545	794	249	45.8	725	(69)	(8.7)
	Current Year[1]	2,187	3,000	813	37.2	3,000	0	0.0
	Advanced Credit Payment	593	651	58	9.8	3,022	2,371	364.2
	State/City Offset[1]	1,192	1,299	107	8.9	1,424	125	9.6
	Total	10,565	11,231	666	6.3	19,210	7,979	71.0
	Net All Funds Receipts[2]	**54,967**	**68,124**	**13,157**	**23.9**	**49,027**	**(19,097)**	**(28.0)**
Fund Distribution	General Fund	25,456	32,123	6,667	26.2	22,682	(9,441)	(29.4)
	Debt Service Funds (RBTF)	27,483	34,062	6,579	23.9	24,513	(9,549)	(28.0)
	Special Revenue Funds (STAR)	2,027	1,939	(88)	(4.4)	1,831	(108)	(5.6)

[1]These components, collectively, are known as the "settlement" on the prior year's tax liability.
[2]PIT Receipts are defined as gross receipts minus refunds.

All Funds FY 2022 receipts are estimated to increase from FY 2021 results primarily reflecting substantial increases in withholding, estimated payments for tax year 2021, and extension payments for tax year 2020.

Withholding in FY 2022 is estimated to increase compared to the prior year, reflecting strong growth in non-bonus wages and exceptional growth in bonus wages. Total unemployment insurance income (UII) related withholding remains elevated from pre-pandemic levels as NYS employment continues to recover from the initial effects of COVID-19, but the effect of UII on total withholding growth is less pronounced than in FY 2021.

Estimated payments for tax year 2021 are expected to increase significantly, driven by a dramatic increase in nonwage income growth. Extension payments (i.e., prior year estimated) for tax year 2020 will also increase due to the strength of nonwage income. Delinquent collections and final

return payments are projected to increase as well. Projected increases in all major PIT revenue components result in unprecedented growth in gross receipts for FY 2022.

Total refunds are projected to increase, offsetting growth in FY 2022 gross receipts, driven by an increase in the January to March 2022 administrative refund cap. Additional projected increases in refunds for tax years prior to 2020 and the state/city offset are offset by a moderate decline in current year refunds related to Tax Year 2020.

The primary risks to FY 2022 receipts estimates result from uncertainty surrounding both bonus payments paid by financial services companies and the fourth quarterly estimated tax payment. With respect to financial sector bonuses, a large portion of these payments are typically paid in the last quarter of the fiscal year. Consequently, complete information about such payments is not available when Budget estimates are constructed. Similarly, the fourth quarterly estimated tax payment is consistently the largest payment, and a significant portion of this revenue is not received until after DOB's forecast has been produced.

All Funds FY 2023 receipts are projected to decrease. Underlying growth in withholding and total estimated payments (driven by growth in total wages and nonwage income respectively), as well as increases in final returns and delinquencies are eclipsed by revenue declines related to the Pass-Through Entity Tax (PTET). Enacted in 2021 in response to Federal tax law changes, the PTET is an elective tax paid by NYS partnerships and S-corporations for which a corresponding PIT credit can be received. PTET revenue is offset by a combination of current refunds credits first received in FY 2023 and a decline in FY 2023 total estimated payments.

All Funds FY 2023 receipts would be further reduced by the FY 2023 Executive Budget proposals to accelerate the middle-class tax cut and create a property tax relief credit.

Base and Rate

The personal income tax (PIT) is by far NYS's largest source of tax receipts, accounting for 67 percent of All Funds tax collections in FY 2021. The State's PIT structure adheres closely to the definitions of AGI and itemized deductions used for Federal PIT purposes, with certain modifications, such as: the inclusion of investment income from debt instruments issued by other states and municipalities and the exclusion of income on certain Federal obligations; the exclusion of pension income received by Federal, NYS and local government employees, private pension and annuity income up to $20,000 ($40,000 for married couples filing jointly), and any Social Security Income and refunds otherwise included in Federal AGI; and the subtraction of state and local income taxes from Federal itemized deductions.

NYS allows either a standard deduction or itemized deductions, whichever is greater. Although NYS generally conforms to Federal rules pertaining to itemized deductions, the State imposes some additional limitations. NYS limits itemized deductions for taxpayers with NYSAGI between $525,000 and $1 million to only 50 percent of Federally allowed deductions, and for taxpayers with incomes above $1 million to only 50 percent of charitable contributions. For tax years 2010 to

2024, itemized deductions are limited to only 25 percent of charitable contributions for taxpayers with NYSAGI above $10 million.

Recent and current tax rates and deductions, as well as detailed tax rate schedule for 2021 are enumerated below.

PERSONAL INCOME TOP TAX RATES, STANDARD DEDUCTIONS, AND DEPENDENT EXEMPTIONS
(dollars)

		2013	2014	2015	2016	2017-2020	2021-2022
Top Rate		**8.82%**	**8.82%**	**8.82%**	**8.82%**	**8.82%**	**10.90%**
Thresholds	Married Filing Jointly	2,058,550	2,092,800	2,125,450	2,140,900	2,155,350	25,000,000
	Single	1,029,250	1,046,350	1,062,650	1,070,350	1,077,550	25,000,000
	Head of Household	1,543,900	1,569,550	1,594,050	1,605,650	1,616,450	25,000,000
Standard Deduction	Married Filing Jointly	15,400	15,650	15,850	15,950	16,050	16,050
	Single	7,700	7,800	7,900	7,950	8,000	8,000
	Head of Household	10,800	10,950	11,100	11,150	11,200	11,200
Dependent Exemption		**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**

In 2016, the Middle-Class Tax Cut established permanent tax rate reductions for taxpayers with taxable income between $26,000 and $300,000.[52] The tax years 2013 through 2017 tax brackets with marginal tax rates of 5.9 percent, 6.45 percent, and 6.65 percent are scheduled to be replaced by two tax brackets with marginal tax rates of 5.5 percent and 6 percent. These rate reductions are scheduled to phase in over the course of eight years, with full implementation occurring in tax year 2025 under current statute. In 2021, the previous top bracket - and associated marginal tax rate of 8.82 percent - was replaced by three temporary brackets with marginal tax rates between 9.65 percent and 10.9 percent. The top rate is scheduled to revert to 8.82 percent beginning tax year 2028.

[52]The cited taxable income amounts apply to taxpayers filing joint returns and are shown absent the influence of CPI adjustments. Tax reductions apply at lower taxable income levels for single and head of household returns.

TAX SCHEDULES FOR 2021 LIABILITY YEAR* (dollars)					
Taxable Income		**Dollar per**	**Tax Rate Percent**		**of Amount Over**
Married - Filing Jointly					
Up to $17,150	$	-	4.00%	$	-
$17,150 - $23,600	$	686	4.50%	$	17,150
$23,600 - $27,900	$	976	5.25%	$	23,600
$27,900 - $43,000	$	1,202	5.90%	$	27,900
$43,000 - $161,550	$	2,093	5.97%	$	43,000
$161,550 - $323,200	$	9,170	6.33%	$	161,550
$323,200 - $2,155,350	$	19,403	6.85%	$	323,200
$2,155,350 - $5,000,000	$	144,905	9.65%	$	2,155,350
$5,000,000 - $25,000,000	$	419,414	10.30%	$	5,000,000
$25,000,000 - and over	$	2,479,414	10.90%	$	25,000,000
Single					
Up to $8,500	$	-	4.00%	$	-
$8,500 - $11,700	$	340	4.50%	$	8,500
$11,700 - $13,900	$	484	5.25%	$	11,700
$13,900 - $21,400	$	600	5.90%	$	13,900
$21,400 - $80,650	$	1,042	5.97%	$	21,400
$80,650 - $215,400	$	4,579	6.33%	$	80,650
$215,400 - $1,077,550	$	13,109	6.85%	$	215,400
$1,077,550 - $5,000,000	$	72,166	9.65%	$	1,077,550
$5,000,000 - $25,000,000	$	450,683	10.30%	$	5,000,000
$25,000,000 - and over	$	2,510,683	10.90%	$	25,000,000
Head of Household					
Up to $12,800	$	-	4.00%	$	-
$12,800 - $17,650	$	512	4.50%	$	12,800
$17,650 - $20,900	$	730	5.25%	$	17,650
$20,900 - $32,200	$	901	5.90%	$	20,900
$32,200 - $107,650	$	1,568	5.97%	$	32,200
$107,650 - $269,300	$	6,072	6.33%	$	107,650
$269,300 - $1,616,450	$	16,304	6.85%	$	269,300
$1,616,450 - $5,000,000	$	108,584	9.65%	$	1,616,450
$5,000,000 - $25,000,000	$	435,097	10.30%	$	5,000,000
$25,000,000 - and over	$	2,495,097	10.90%	$	25,000,000

* Benefits of graduated tax rates are recaptured for taxpayers with adjusted gross incomes above $107,650.

Liability

PIT liability is derived from the NYSAGI income base. As detailed previously in the *Economic Backdrop – New York State Adjusted Gross Income* section of this volume, NYSAGI growth has been somewhat volatile in the years since the Great Recession. The major components, growth rates, and shares of NYSAGI are enumerated below. Growth rates in recent years also show the impact of taxpayers behaving strategically by shifting income in anticipation of tax law changes, which can enhance or swamp the economic drivers of NYSAGI.

NYSAGI MAJOR COMPONENT DISTRIBUTION
(millions of dollars)

Income	Actual							Estimate			
Component	2013	2014	2015	2016	2017	2018	2019	2020[1]	2021	2022	2023
NYSAGI											
Amount	714,046	776,477	807,775	794,105	874,568	906,868	930,755	961,698	1,092,582	1,133,885	1,186,947
Growth	(0.1%)	8.7%	4.0%	(1.7%)	10.1%	3.7%	2.6%	3.3%	13.6%	3.8%	4.7%
Wages											
Amount	525,924	558,857	584,317	592,135	626,377	645,360	673,440	664,010	720,015	755,756	785,974
Growth	2.0%	6.3%	4.6%	1.3%	5.8%	3.0%	4.4%	(1.4%)	8.4%	5.0%	4.0%
NYSAGI Share	73.7	72.0	72.3	74.6	71.6	71.2	72.4	69.0	65.9	66.7	66.2
Net Capital Gains											
Amount	68,492	90,918	93,409	72,465	96,426	99,766	90,855	116,188	173,565	196,085	209,834
Growth	(11.3%)	32.7%	2.7%	(22.4%)	33.1%	3.5%	(8.9%)	27.9%	49.4%	13.0%	7.0%
NYSAGI Share	9.6	11.7	11.6	9.1	11.0	11.0	9.8	12.1	15.9	17.3	17.7
Interest and Dividends											
Amount	32,604	34,970	33,591	35,014	38,749	43,175	48,391	36,605	38,863	42,081	44,563
Growth	(2.5%)	7.3%	(3.9%)	4.2%	10.7%	11.4%	12.1%	(24.4%)	6.2%	8.3%	5.9%
NYSAGI Share	4.6	4.5	4.2	4.4	4.4	4.8	5.2	3.8	3.6	3.7	3.8
Taxable Pension											
Amount	40,394	42,461	44,131	44,815	47,175	49,367	50,731	51,544	52,561	53,529	54,740
Growth	3.5%	5.1%	3.9%	1.6%	5.3%	4.6%	2.8%	1.6%	2.0%	1.8%	2.3%
NYSAGI Share	5.7	5.5	5.5	5.6	5.4	5.4	5.5	5.4	4.8	4.7	4.6
Net Business and Partnership Income											
Amount	83,995	89,448	95,745	94,548	111,115	99,519	98,259	90,789	108,047	121,552	129,510
Growth	(0.4%)	6.5%	7.0%	(1.3%)	17.5%	(10.4%)	(1.3%)	(7.6%)	19.0%	12.5%	6.5%
NYSAGI Share	11.8	11.5	11.9	11.9	12.7	11.0	10.6	9.4	9.9	10.7	10.9
All Other Incomes and Adjustments[2]											
Amount	(37,363)	(40,178)	(43,418)	(44,873)	(45,273)	(30,318)	(30,922)	2,563	(470)	(35,118)	(37,673)
Growth	6.7%	7.5%	8.1%	3.4%	0.9%	(33.0%)	2.0%	(108.3%)	(118.3%)	7375.0%	7.3%
NYSAGI Share	(5.2)	(5.2)	(5.4)	(5.7)	(5.2)	(3.3)	(3.3)	0.3	(0.0)	(3.1)	(3.2)

[1]Estimates for 2020 are based on processing data.

[2]Includes alimony received, unemployment income, IRA income, and other incomes. This number is negative due to Federal and NYS adjustments to income, which together reduce final NYSAGI.

Source: NYS DTF; DOB staff estimates.

LIABILITY AND EFFECTIVE TAX RATES[1] (millions of dollars)					
	NYSAGI		Liability		Effective
	Amount	Growth	Amount	Growth	Tax Rate
2012	714,698	8.7%	38,017	4.7%	5.3%
2013	714,046	(0.1%)	37,331	(1.8%)	5.2%
2014	776,477	8.7%	41,910	12.3%	5.4%
2015	807,775	4.0%	43,503	3.8%	5.4%
2016	794,105	(1.7%)	41,736	(4.1%)	5.3%
2017	874,568	10.1%	48,000	15.0%	5.5%
2018	906,868	3.7%	48,712	1.5%	5.4%
2019	930,755	2.6%	49,567	1.8%	5.3%
2020[2]	961,698	3.3%	52,863	6.6%	5.5%
2021[2]	1,092,582	13.6%	66,654	26.1%	6.1%
2022[2]	1,133,885	3.8%	69,422	4.2%	6.1%

[1]Liability divided by AGI.

[2]Estimates and projections

Source: NYS DTF; DOB staff estimates.

Over time the State has become increasingly reliant on its high-income taxpayers as a source of income tax revenues. Note that the new personal income tax law enacted with the FY 2022 Budget created three new "millionaire" brackets of 9.65 percent, 10.3 percent, and 10.9 percent, replacing the 8.82 percent rate for these filers.

The complex interaction between tax policy and taxpayer behavior is only one example of how changes in the economy, government policy, or the institutional practices of firms (i.e., the timing and types, not to mention the size, of bonus payments) that affect a small number of taxpayers in the high-income groups can have disproportionately large effects on State tax revenues. A particular concern to NYS is the severe limits that 2017's TCJA imposed on itemized deductions, especially the deduction for state and local taxes, including property taxes. Note the decline in liability growth to 1.5 percent for 2018 after a surge to 15.0 percent growth in 2017, as taxpayers sought to take advantage of tax provisions that would be taken away by the TCJA in 2018, the first tax year under that law. Growth fell to just 1.8 percent for tax year 2019. Unusual amounts of Federal fiscal support to individuals appears to have helped liability grow 6.6 percent in 2020, the first year of the COVID-19 pandemic (based in part on current processing information). Meanwhile, liability is expected to jump 26.1 percent for tax year 2021 in the wake of the new, higher brackets and rates enacted that year, with growth forecast to slow to 4.2 percent in tax year 2022.

Although significant risks remain in any estimates of income tax liability, estimated tax liability for a particular tax year leads, with a high degree of confidence, to the approximate level of cash receipts that can be expected for such year. Despite this strong relationship, estimation of cash payments is subject to an important complication that pervades forecasts for the Executive Budget

and other State Financial Plan updates, namely determining the portions of tax-year liability that will occur in particular SFYs. Income tax prepayments – withholding tax and quarterly estimated tax payments – tend to be received not long after income is earned. For example, most withholding tax payments and quarterly estimated tax payments for tax year 2021 will be received before the end of FY 2022. Settlement payments – those payments received when taxpayers file final returns for a tax year – tend to be received in the next SFY after the end of a tax year. Thus, settlement payments for tax year 2021 will be received largely in FY 2023.

Administration

DTF administers PIT in general conformity with the Federal PIT and IRS administration. Taxpayers have taxes withheld from their wages and employers subsequently remit those withholdings to DTF on various schedules based on their payroll size. Taxpayers may be required to remit estimated tax on a quarterly basis if withholding is insufficient or they receive nonwage income. Tax returns are generally due on April 15, though taxpayers may request an extension until October 15. Taxpayers with tax paid in excess of liability may request refunds or opt to credit overpayments toward future tax liabilities.

The payment of refunds during the final quarter of the State's fiscal year is administratively managed in accordance with cash flow expectations and to minimize potential year-end imbalances in the State's General Fund. The administrative refund cap was increased to $2,249 million in FY 2018 and remained steady through FY 2020. After a slight decline to $2,187 million in FY 2021, the administrative refund cap is scheduled to increase to $3,000 million annually beginning in FY 2022.

History

PERSONAL INCOME TAX RECEIPTS HISTORY
(millions of dollars)

		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Withholding		31,199	31,958	33,368	34,907	36,549	37,524	40,269	41,084	43,118	44,218
Estimated Payments	Current Year	8,097	9,001	9,454	10,367	11,561	10,912	14,329	10,481	10,996	10,930
	Prior Year[1]	3,532	3,192	5,183	3,376	4,550	4,060	3,452	3,529	6,029	5,512
	Total	11,628	12,193	14,637	13,743	16,111	14,972	17,781	14,010	17,025	16,441
Final Returns	Current Year	224	203	250	254	269	261	308	344	339	402
	Prior Year[1]	1,893	1,945	2,145	1,952	2,360	2,328	2,170	2,341	3,114	3,170
	Total	2,117	2,148	2,395	2,206	2,630	2,588	2,478	2,685	3,454	3,572
Delinquent		1,086	1,144	1,175	1,393	1,310	1,434	1,507	1,396	1,388	1,300
	Gross Receipts	**46,030**	**47,443**	**51,575**	**52,248**	**56,600**	**56,518**	**62,036**	**59,175**	**64,985**	**65,532**
Refunds	Prior Year[1]	4,693	4,568	5,367	4,961	5,130	5,199	6,292	6,034	5,927	6,048
	Previous Years	454	589	554	458	618	474	527	589	530	545
	Current Year[1]	1,750	1,750	2,078	1,950	2,550	1,750	2,249	2,250	2,245	2,187
	Advanced Credit Payment	0	0	0	579	571	678	610	1,080	1,505	593
	State/City Offset[1]	366	309	615	591	675	851	856	1,135	1,117	1,192
	Total	7,263	7,216	8,614	8,539	9,545	8,952	10,534	11,088	11,326	10,565
	Net All Funds Receipts	**38,768**	**40,227**	**42,961**	**43,710**	**47,055**	**47,566**	**51,501**	**48,087**	**53,659**	**54,967**
Fund Distribution	General Fund	25,843	26,884	28,864	29,485	31,957	32,535	36,037	21,620	24,646	25,456
	Debt Service Funds (RBTF)	9,692	10,057	10,740	10,927	11,764	11,891	12,875	24,044	26,830	27,483
	Special Revenue Funds (STAR)	3,233	3,286	3,357	3,297	3,335	3,139	2,589	2,423	2,184	2,027

[1]These components, collectively, are known as the "settlement" on the prior year's tax liability.

Significant statutory changes within the past decade include:

- The Empire State Film Production Tax Credit has been expanded and extended five times since its creation in 2004.
  - $420 million has been the annual authorization for the credit effective in 2010, and the credit is currently authorized through Tax Year 2026.
  - $7 million of the credit was dedicated to post production effective in 2010, but this was increased to $25 million in 2015.
  - In 2020, the credit was reduced from 30 percent to 25 percent, a minimum budget requirement of $1 million for films produced in New York City and the counties of Nassau, Suffolk, Rockland and Westchester ($250,000 if filmed elsewhere in the State) was imposed, and new variety shows were excluded from credit eligibility.

- In 2011, PIT reform lowered middle income taxpayer rates and added a new top tax rate of 8.82 percent, for tax years 2012 through 2014. PIT reform also indexed the tax brackets and standard deduction to the CPI-U (Consumer Price Index for All Urban Consumers) in tax years 2013 and 2014. These tax rates and associated brackets, including indexation, were subsequently extended through 2017. Additional middle-income tax cuts were enacted in 2016, and phased-in between tax years 2018 and 2025. Separately, the aforementioned top rate was extended two additional times, most recently through tax year 2024.

- The New York Youth Works Program was created in 2011, providing a tax credit to businesses employing at-risk youth in part-time or full-time positions.

- The Rehabilitation of Historic Properties Credit is equal to 20 percent of qualified rehabilitation expenditures made by the taxpayer with respect to a qualified historic structure in NYS with a cap of $5 million per structure. Since its creation in 2006, the credit has been extended twice and is effective through tax year 2024.

- In 2013, taxpayers with business or farm income not exceeding $250,000 were provided a modification equal to a percentage of business or farm income, reducing Federal AGI by 3 percent in tax year 2014, 3.75 percent in tax year 2015, and 5 percent for tax years 2016 and beyond.

- In 2013, a refundable $350 Middle-Class Family Tax Credit was provided in each of tax years 2014 through 2016 to taxpayers with dependents under the age of 17, zero or positive tax liability, and income between $40,000 and $300,000. The delivery of the credit was modified in 2014 to eliminate the prepayment element for tax years 2015 and 2016.

- In 2014, a refundable Real Property Tax Freeze Credit was established, providing a two-year tax relief program to offset school and municipal property tax increases for NYS homeowners. The credit was limited to properties that have STAR property tax exemption eligibility and are located within a NYS Property Tax Cap-compliant school/municipal district.

- In 2014, a refundable Enhanced Real Property Tax Credit was established for residents of NYC based on qualifying real property taxes paid or the real property tax equivalent. This was subsequently extended in 2015 for an additional four years, through tax year 2019.

- Beginning in tax year 2014, the entire net income tax rate for qualified NYS manufacturers was lowered from 6.5 to zero percent, and those manufacturers were eligible for a new Property Tax Credit equal to 20 percent of the real property taxes paid.

- In 2015, a refundable Property Tax Relief Credit was established and administered as an advanced credit payment, to offset property tax increases for all eligible taxpayers who own and primarily reside in real property located within eligible school districts that are compliant with the two percent annual property tax cap. The credit expired after tax year 2019.

- In 2015, the Brownfield Clean-Up Program was reformed, and tax credits were extended through FY 2026. Reforms included the prioritization of site redevelopment in economically distressed areas, low-income housing, or properties that are upside down or underutilized. The Program also provided for the creation of an expedited remediation program, gave a more detailed description of eligible costs for redevelopment tax credits, and allowed the real property tax and environmental remediation insurance credits to sunset.

- The refundable Farm Workforce Retention Credit was created in 2016 for farm employers equal to a fixed amount per eligible farm employee, with credit amounts varying between $250 per eligible farm employee in tax year 2017 up to $600 in tax year 2021. This credit is available through tax year 2021.

- In 2016, the STAR PIT credit for eligible NYC resident taxpayers was converted from a credit against NYC tax liability to a credit against NYS tax liability.

- The Middle-Class Tax Cut provided reduced middle-income PIT rates over the course of eight years. The rate cuts began in tax year 2018, and in 2024 when fully phased in, the range of marginal tax rates on middle incomes will be reduced from between 5.9 percent and 6.65 percent to between 5.5 percent and 6 percent.

- In 2017, the STAR-related NYC PIT rate reduction benefit was converted into a NYS PIT credit for NYC taxpayers.

- NYS made several changes in 2018 in an effort to combat the effects of the 2017 TCJA, namely:

    - Maintained the 2017 value of the Empire State Child Tax Credit;

    - Decoupled from the Federal $10,000 state and local tax itemized deduction limit, the temporary medical expense deduction increase, and the repeal and limitation of other federal itemized deductions;

    - Maintained the NYS single filer standard deduction and eliminated the restriction that a NYS filer may only itemize deductions if deductions were itemized on the filer's federal return; and

    - Established the Charitable Gifts Trust Fund to accept donations to fund health care and education programs. Contributions made to the Fund or qualified contributions made to the Health Research Inc., the SUNY Impact Foundation, or the CUNY Research Foundation were provided an 85 percent tax credit, while school districts and municipalities were authorized to establish charitable funds through local law and provide up to a 95 percent tax credit for donations to such funds.

- In 2021, NYS enacted a surcharge on high-income earners, increasing the prior top marginal rate of 8.82 percent to 9.65 percent, while adding higher marginal rates of 10.3 percent and 10.9 percent beginning at $5 million and $25 million in taxable income, respectively. The rate increases are effective tax years 2021 through 2027. Beginning tax year 2028, the top three rates are scheduled to revert to 8.82 percent on a permanent basis.

- In 2021, the Property Tax Relief Credit was established to provide qualifying homeowners with property tax relief when total property taxes exceed a fixed percentage of income. Qualifying homeowners must be PIT STAR credit-eligible New York residents with incomes no greater than $250,000. This credit is available for tax years 2021 through 2023.

- In 2021, two separate programs were enacted to provide critical assistance to the severely impacted by the pandemic food service and entertainment industries:

    - Restaurant Return-to-Work Tax Credit Program: this refundable tax credit is available to small, independently owned restaurants that are located within New York City, which were subject to a ban on indoor dining for over six months, or outside of New York City in areas that were designated as a red or orange zone for at least 30 days. The credit is only available to restaurants that have experienced year-to-year revenue and/or job losses of 40 percent or more and have increased their employment within certain timeframes. Such restaurants are eligible for a tax credit of $5,000 for each net full-time equivalent position added, up to a maximum cap of $50,000 per business. The total credit under this program is capped at $35 million and may be claimed as an advanced refundable credit. The credit is administered by the Department of Economic Development.

    - New York City Musical and Theatrical Production Tax Credit: this refundable tax credit is available to qualified musical and theatrical production companies that produce a musical or theater production in New York City and spend at least $1 million dollars in qualified production expenditures. The program is a two-year program and companies can receive credits for tax years 2021 through 2023. Initial applications must be submitted by December 31, 2022 and final applications no later than 90 days after the production closes or 90 days following the program end date of March 31, 2023, whichever comes first. The tax credit is equal to 25 percent of the sum of its production expenditures incurred, not to exceed $3 million per production company in the first year in which applications are accepted and/or not to exceed $1.5 million per production company in the second year. The amount of credit under this program is capped at $100 million and is administered by the Department of Economic Development.

Alcoholic Beverage Taxes

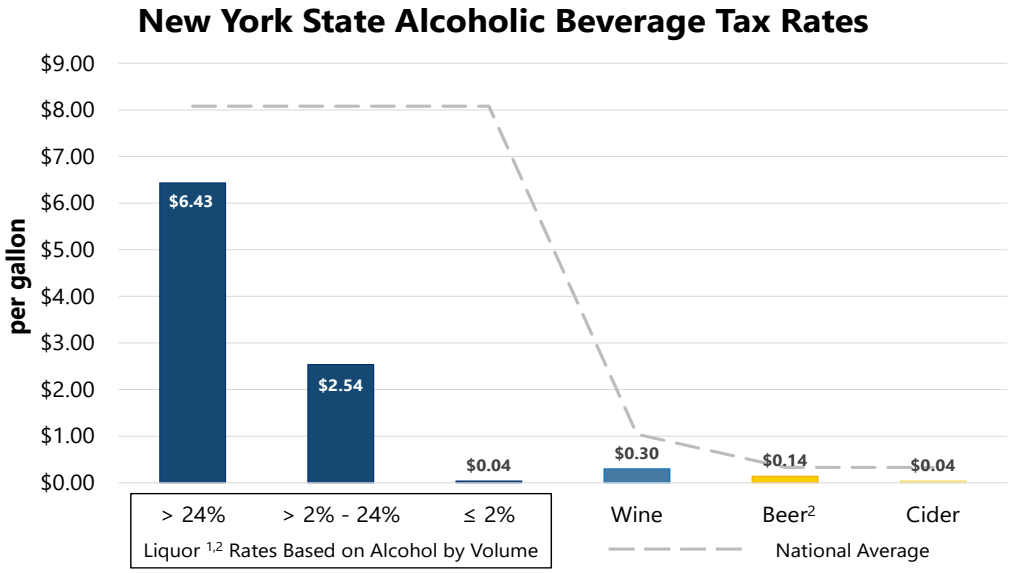
ALCOHOLIC BEVERAGE TAXES (millions of dollars)								
		FY 2021 Actual	FY 2022 Estimated	Change Dollar	Change Percent	FY 2023 Projected	Change Dollar	Change Percent
General Fund	Beer	43.2	43.7	0.5	1.1	44.2	0.5	1.1
	Liquor	207.6	209.9	2.3	1.1	212.2	2.3	1.1
	Wine and Other	20.2	20.4	0.2	1.1	20.6	0.2	1.1
	Total	271.0	274.0	3.0	1.1	277.0	3.0	1.1
All Funds Total		**271.0**	**274.0**	**3.0**	**1.1**	**277.0**	**3.0**	**1.1**

FY 2022 receipts are estimated to increase from FY 2021 results primarily due to a slight increase in consumption during the COVID-19 pandemic, as well as the continuation of recent wine, liquor, and beer consumption trend growth.

FY 2023 receipts are projected to increase slightly from the current year mainly due to the assumption of continuing wine, liquor, and beer consumption trends.

Base and Rate

NYS imposes excise taxes at various rates on liquor, beer, wine and cider beverages. As of January 2021, compared to alcoholic beverage tax rates in other states, NYS currently has the 28th lowest liquor tax; the 12th lowest beer tax; and tied for the 9th lowest wine tax.



[1]NYS taxes liquor by the liter, while it taxes all other alcoholic beverages by the gallon. For visual comparison purposes, liquor tax rates of $1.70, $0.67, and $0.01 per liter have been converted (One US Gallon = 3.785 liters) into rates of $6.43, $2.54, and $0.04 per gallon.

[2]NYC imposes an additional tax of 26.04 cents per gallon (6.88 cents per liter) on liquor and 12 cents per gallon on beer.

Liability

In general, wine and liquor consumption have experienced marginal to moderate growth over the past decade, while beer consumption has remained relatively flat, with a few exceptions (e.g., craft brewery boom and subsequent leveling off) during the same period.

Administration

Generally, the alcoholic beverage taxes are remitted by licensed distributors (including producers) and non-commercial importers of such beverages in the month following the month of delivery. Registered distributors can apply for annual filing status, and be approved by DTF, if they produce under a certain volume of alcohol, and do not hold another license with SLA that requires them to pay taxes on a monthly basis. This is also the case for individual non-commercial importers of beer or wine; however, it is not an option for liquor importers.

History

DISTRIBUTIONS BY BEVERAGE TYPE BASED ON REPORTED VOLUMES (millions of dollars)					
	General Fund				All Funds
	Beer	Liquor	Wine and Other	Total	Total
FY 2012	45	174	19	238	238
FY 2013	48	180	19	246	246
FY 2014	47	184	20	250	250
FY 2015	46	185	20	251	251
FY 2016	47	188	20	255	255
FY 2017	47	190	20	258	258
FY 2018	46	193	20	259	259
FY 2019	46	196	21	262	262
FY 2020	44	196	19	259	259
FY 2021	43	208	20	271	271

Significant statutory changes within the past decade include:

- In 2016, products used in on-site tastings were exempt from taxation.
- In 2020, liquor under two percent alcohol by volume (ABV) was exempt from taxation.

Auto Rental Tax

AUTO RENTAL TAX (millions of dollars)								
		FY 2021	FY 2022	Change		FY 2023	Change	
		Actual	Estimated	Dollar	Percent	Projected	Dollar	Percent
Capital Projects Funds	DHBTF	51.9	77.0	25.1	48.4	74.0	(3.0)	(3.9)
Special Revenue Funds	PTSOA	12.1	22.0	9.9	81.8	24.0	2.0	9.1
All Funds Total		**64.0**	**99.0**	**35.0**	**54.7**	**98.0**	**(1.0)**	**(1.0)**

FY 2022 receipts are estimated to increase from FY 2021 results as travel, tourism, and business activity bounce back from last year's significant declines caused by the COVID-19 economic downturn.

FY 2023 receipts are projected to slightly decline below the current year primarily due to an anticipated shift away from auto rental consumption towards an alternative mode of transportation, the recently enacted peer-to-peer car sharing program.

Base and Rate

NYS levies a 12 percent tax (6 percent statewide special tax and 6 percent special supplemental tax) on charges for the rental or use of a passenger car with a gross vehicle weight of 9,000 pounds or less in NYS, regardless of where the vehicle is registered or the residency of the renter. For the special supplemental tax, collections from rentals in the MCTD are directed to the MTA (off-Budget) and collections from rentals outside the MCTD are directed to PTSOA. The tax does not apply to a car lease covering a period of one year or more.

Liability

ART receipts are influenced by overall economic conditions, particularly consumer and business spending on travel. Unusual events that disrupt the flow of travel and tourism within NYS (i.e., catastrophic weather events such as Superstorm Sandy or global pandemics such as COVID-19) can have a significant influence on receipts. The emergence of app-based transportation options has had a predictably adverse effect on the overall demand of rental vehicles.

Administration

Vendors remit ART receipts quarterly to DTF via their sales tax return.

History

AUTO RENTAL TAX RECEIPTS HISTORY (millions of dollars)					
	Capital Projects Funds (DHBTF)	Special Revenue Funds			All Funds Total
		MTAFAF	PTSOA	Total	
FY 2012	65	39	0	39	104
FY 2013	68	41	0	41	109
FY 2014	71	43	0	43	114
FY 2015	74	45	0	45	119
FY 2016	79	47	0	47	126
FY 2017	78	49	0	49	127
FY 2018	78	45	0	45	123
FY 2019	81	49	0	49	130
FY 2020	87	0	20	20	107
FY 2021	52	0	12	12	64

Significant statutory changes within the past decade include:

- In 2019, the tax rate within the MCTD increased from 11 to 12 percent and outside the MCTD the tax rate increased from 6 to 12 percent. In addition, the revenues from the MCTD supplemental tax rate (6 percent) were moved off-Budget and no longer included in ART collections.

Cigarette and Tobacco Tax

CIGARETTE AND TOBACCO TAXES (millions of dollars)								
		FY 2021 Actual	FY 2022 Estimated	Change Dollar	Change Percent	FY 2023 Projected	Change Dollar	Change Percent
General Fund	Cigarette Tax	219.7	211.8	(7.9)	(3.6)	202.4	(9.4)	(4.4)
	Tobacco Tax	84.9	75.7	(9.2)	(10.8)	95.0	19.3	25.5
	Registration Fees	5.2	5.5	0.3	5.8	5.6	0.1	1.8
	Total	309.8	293.0	(16.8)	(5.4)	303.0	10.0	3.4
HCRA	Cigarette Tax	695.9	671.0	(24.9)	(3.6)	641.0	(30.0)	(4.5)
All Funds Total		**1,005.6**	**964.0**	**(41.6)**	**(4.1)**	**944.0**	**(20.0)**	**(2.1)**

FY 2022 receipts are estimated to decrease from FY 2021 results primarily due to a continued decline in taxable cigarette consumption, albeit at a slower pace than the long-term trend. In addition to the continued efforts of the Cigarette Strike Force, COVID-19 related increases in working from home have also likely had a positive impact on taxable cigarette consumption in NYS. Tobacco products tax receipts are estimated to decrease due to a large amount of refunds, however this is somewhat offset by the first full-year impact of legislation that reformed the tobacco products tax.

FY 2023 receipts are projected to decrease from the current year due to the resumption of the trend decline in taxable cigarette consumption. Tobacco receipts are projected to increase substantially due to the resumption of typical refund trends.

Base and Rate

The cigarette and tobacco product taxes consist of the following:

- The NYS cigarette excise tax is $4.35 per pack (20 cigarettes) or $43.50 per carton (200 cigarettes). In NYC, there is an additional tax of $1.50 per pack or $15 per carton. In total, in NYC, the combined State and City tax is $5.85 per pack or $58.50 per carton.

- The tax on tobacco products tax is on cigars, little cigars, snuff, and all other tobacco products. The tax per 20 little cigars is $4.35, while the tax on snuff is $2.00 per ounce or fraction thereof. For all other tobacco products (large cigars, chewing tobacco), the tax is 75 percent of the wholesale price.

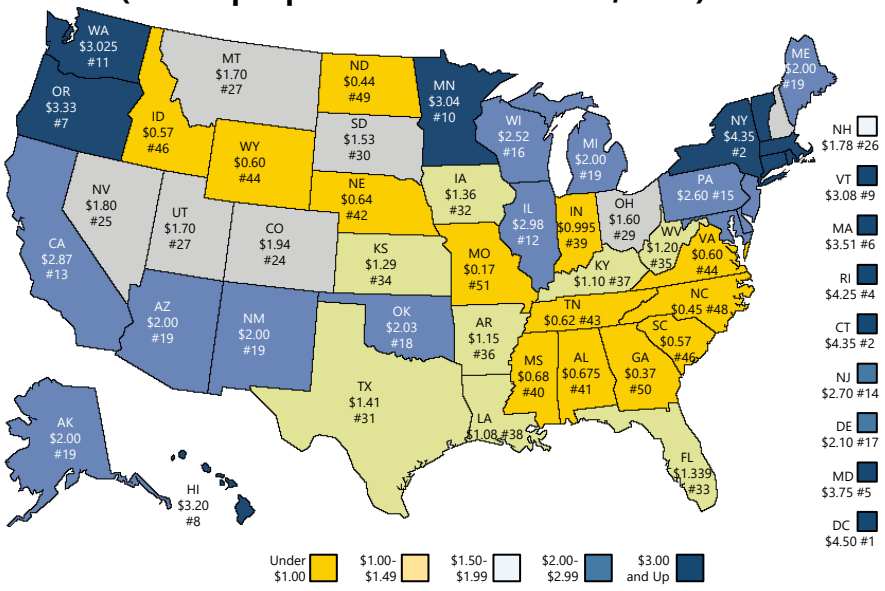
- The registration fee for each retail location is $300, and $100 for each vending machine. The license application fee for either a wholesaler cigarette dealer or cigarette agent is $1,500.

Liability

Taxable cigarette consumption is a function of retail cigarette prices and a long-term downward trend in consumption. The decline in consumption reflects the impact of increased public awareness of the adverse health effects of smoking, smoking restrictions imposed by governments, anti-smoking education programs, and changes in consumer preferences toward other types of tobacco.

At a tax rate of $4.35 per pack, NYS currently has the second-highest state cigarette tax in the nation, behind only the District of Columbia (taxing at a rate of $4.50 per pack). With a national median tax of $1.78 per pack, cigarette tax evasion is a serious problem in NYS and throughout the Northeast. The most significant area of concern is the importation of cigarettes from low-tax states. For example, an illegal cigarette trafficking operation was busted in 2019, in which cigarettes were purchased in North Carolina and sold in NYS, had illegal sales that totaled more than $12 million. Widespread evasion not only reduces State and local revenues, but also reduces the income of legitimate wholesalers and retailers. DTF continues to vigorously pursue cigarette bootlegging through investigatory and enforcement efforts.

State Cigarette Tax Rates
(dollars per pack as of December 21, 2021)



Administration

Retail establishments that sell cigarettes are required to register with DTF and vending machine owners are required to purchase registration stickers from DTF.

State-registered stamping agents, who are mostly wholesalers, purchase tax stamps from NYS and affix the stamps to cigarette packages to be sold by registered retailers. The tax is paid by the stamping agent and is passed on. Purchasers of non-State stamped cigarettes, such as cigarettes sold out-of-State or on Native American lands, must remit the cigarette excise tax directly to DTF. An individual may bring two cartons into NYS without being subject to the excise tax.

History

CIGARETTE AND TOBACCO TAXES RECEIPTS HISTORY
(millions of dollars)

	General Fund				HCRA	All Funds
	Cigarette Tax	Tobacco Tax	Registration Fees	Total	Cigarette Tax	Total
FY 2012	367	103	2	472	1,162	1,634
FY 2013	348	91	3	443	1,108	1,551
FY 2014	324	95	7	426	1,027	1,453
FY 2015	303	46	7	355	959	1,314
FY 2016	293	22	7	322	928	1,251
FY 2017	277	76	7	360	876	1,235
FY 2018	262	73	7	342	829	1,171
FY 2019	246	75	6	328	780	1,108
FY 2020	228	79	6	313	722	1,035
FY 2021	220	85	5	310	696	1,006

Significant statutory changes within the past decade include:

- In 2013, the penalty for possession of unstamped or unlawfully stamped cigarettes was increased from $150 to $600 per carton to reflect increases in the excise tax on cigarettes and to strengthen the deterrent effect in the current environment.

- In 2014, a multi-agency task force was formed to reduce illegal tobacco trafficking and sales. The multi-agency Cigarette Strike Force is composed of State and local agencies that work with Federal agents to stop the influx of counterfeit and untaxed tobacco products into NYS. The Strike Force also focuses on tracing any illicit financial earnings from criminal activity.

- In 2020, the definition of "wholesale price" of tobacco products was reformed to clarify that it means the price for which the tobacco products are sold to a distributor and cigarette enforcement was enhanced via the following amendments:

    - Authorized DTF to revoke a retailer's CoR for one year (increased from six months) for its first violation for selling untaxed cigarettes;

- Required that a retail dealer who is caught selling untaxed cigarettes have the CoR revoked at all retail locations. For a second violation within five years, this punishment also applies to any affiliated person of the retail dealer;
- Authorized the automatic start to the Certificate of Authority (CoA) (the required license to collect sales tax and operate a business) revocation process after the third revocation of a retail dealer's registration in five years, effectively shutting down the business' operations; and
- Authorized DTF to deny a retail dealer registration to any applicant with outstanding tax debts.

- In 2021, it was established that retail dealers who had their licenses suspended or revoked were allowed ten days to transfer their lawful products to another retail dealer. Additionally, DTF's ability to revoke or suspend a retailer's CoA if they sell unlawfully stamped cigarettes three or more times in five years was clarified.

Highway Use Tax

HIGHWAY USE TAX (millions of dollars)								
		FY 2021 Actual	FY 2022 Estimated	Change Dollar	Change Percent	FY 2023 Projected	Change Dollar	Change Percent
Capital Projects Funds (DHBTF)	TMT	110.6	117.0	6.4	5.8	117.8	0.9	0.7
	Fuel Use	23.3	25.1	1.8	7.5	25.2	0.1	0.6
	IFTA Decal	0.5	0.5	0.0	7.8	0.5	0.0	0.0
	Total	134.4	142.6	8.2	6.1	143.6	1.0	0.7
Special Revenue Funds (HUTAA)	Registrations	0.5	1.4	0.9	207.0	0.4	(1.0)	(71.4)
All Funds Total		**134.8**	**144.0**	**9.1**	**6.8**	**144.0**	**0.0**	**0.0**

FY 2022 receipts are estimated to increase from FY 2021 results due to increases in truck mileage tax (TMT) and fuel use tax (FUT) receipts mainly attributable to a bounce back in demand from the trucking sector following the previous year's COVID-19 related economic downturn. Additionally, registrations are estimated to increase due to FY 2022 being a renewal year in the triennial registration cycle.

FY 2023 receipts are projected to remain flat from the current year due to small growth in TMT and FUT receipts as receipts return towards typical pre-COVID-19 trends. Furthermore, registrations are projected to decrease due to FY 2023 being a non-triennial year.

Base and Rate

There are four components of the highway use tax (HUT):[53]

- The TMT is levied on motor carriers who operate commercial vehicles on NYS public highways.

- The FUT ensures that motor carriers who purchase fuel out-of-State, but operate a vehicle on NYS public highways, are subject to the same taxes as fuel purchased in-State. The current fuel use tax rate is $0.24 per gallon.

- Pursuant to IFTA, motor carriers who designate NYS as their base jurisdiction for IFTA licensing purposes must apply and receive one IFTA license per fleet of vehicles and a set of two decals for each qualified vehicle operated under said license. There is no fee for the

[53] Please refer to https://www.tax.ny.gov/pubs_and_bulls/publications/highway_use_pubs.htm for a detailed description of these components.

license, which is valid from January 1st through December 31st of each calendar year. There is, however, an $8 fee for each set of decals issued.

- As part of the HUT or AFC registration process, an issued HUT or AFC decal is required to be affixed to each vehicle. The cost of the certification and decal fee is $1.50.

Liability

HUT receipts are generally a function of the demand for trucking, which fluctuates with national and State economic conditions.

Administration

Most taxpayers remit the TMT on a monthly basis, on or before the last day of each month for the preceding month. Fuel use taxpayers file quarterly with their home state under the rules of IFTA. The home state subsequently distributes the funds to the state where the liability occurred. The registration process generally occurs on a triennial basis.

History

HIGHWAY USE TAX RECEIPTS HISTORY
(millions of dollars)

	Capital Projects Funds (DHBTF)					Special Revenue Funds (HUTAA)	All Funds
	TMT	Fuel Use	IFTA Decal	Registrations	Total	Registrations	Total
FY 2012	98	30	4	0	132	0	132
FY 2013	98	31	0	15	145	0	145
FY 2014	99	31	0	6	136	0	136
FY 2015	103	31	1	6	140	0	140
FY 2016	108	30	0	20	159	0	159
FY 2017	109	27	0	0	136	2	139
FY 2018	110	25	1	0	136	(43)	93
FY 2019	121	25	1	0	147	(2)	145
FY 2020	113	28	1	0	141	1	141
FY 2021	111	23	0	0	134	0	135

Significant statutory changes within the past decade include:

- Enacted in 2006, the exemption on alternative fuels (E85, B20, CNG, and hydrogen) has been extended several times for various durations.

- In 2016, the $15 HUT registration fee and $4 decal fees directed to the DHBTF were replaced with a combined HUT registration and decal fee of $1.50, directed to the HUTAA.

Medical Cannabis Tax

MEDICAL CANNABIS TAX (millions of dollars)			FY 2021 Actual	FY 2022 Estimated	Change Dollar	Change Percent	FY 2023 Projected	Change Dollar	Change Percent
Special Revenue Funds (MCTF)	Counties	Manufacturer	1.9	2.9	1.0	55.2	2.9	0.0	0.0
		Distributor	1.9	2.9	1.0	55.2	2.9	0.0	0.0
	Agency Operations	OASAS	0.4	0.7	0.2	54.0	0.7	0.0	0.0
		DCJS	0.4	0.7	0.2	54.0	0.7	0.0	0.0
	Cannabis Revenue Fund		3.8	5.9	2.1	54.0	5.9	0.0	0.0
	Total		8.4	13.0	4.6	54.6	13.0	0.0	0.0
All Funds Total			**8.4**	**13.0**	**4.6**	**54.6**	**13.0**	**0.0**	**0.0**

FY 2022 receipts are estimated to increase from FY 2021 results primarily due to the continued maturation of the medical cannabis program stemming from increased program participation by both practitioners and patients alike.

FY 2023 receipts are projected to remain flat.

Base and Rate

An excise tax of seven percent is imposed on the gross receipts from medical cannabis sold or furnished by a registered organization to a certified patient or designated caregiver.

Administration

The medical cannabis program is administered by the NYS Department of Health (DOH), which determines the number of registered manufacturing and distribution organizations permitted within NYS. Registered organizations are responsible for manufacturing and dispensing medical cannabis in NYS, and each is permitted by statute to have up to four dispensing facilities.[54]

The tax is imposed on the registered organization, which must remit the excise tax collections monthly to DTF. The tax return must include the gross receipts by the county where the medical cannabis was manufactured and the county where the dispensing facility is located. Returns must be filed, and the tax paid no later than the 20th of each month following the month in which the product was sold.

[54] Please refer to NYS DOH's Medical Cannabis Program Guide for a complete list of qualified conditions, registered organizations, and laws and regulations.

History

The medical use of cannabis was authorized in 2014 and dispensing of medical cannabis began in 2016.

MEDICAL CANNABIS TAX RECEIPTS HISTORY
(thousands of dollars)

	Special Revenue Funds (MCTF)						All Funds
	Medical Cannabis Counties		Agency Operations		MCTF		
	Manufactured	Distributed	OASAS	DCJS	Cannabis Revenue Fund[1]	Total	Total
FY 2016	2.5	2.5	0.6	0.6	5.0	11.0	11.0
FY 2017	130.7	130.7	28.8	28.8	265.6	584.6	584.6
FY 2018	423.1	423.1	94.0	94.0	846.2	1,880.5	1,880.5
FY 2019	870.6	870.6	193.5	193.5	1,739.1	3,867.3	3,867.3
FY 2020	1,290.1	1,290.1	283.4	283.4	2,550.6	5,697.6	5,697.6
FY 2021	1,884.3	1,884.3	422.0	422.0	3,798.3	8,411.0	8,411.0

[1]Monies were not directed to the Fund until FY 2022.

Significant statutory changes within the past decade include:

- In 2021, the Marihuana Regulation and Taxation Act (MRTA) authorized the transfer of the remaining and previously undistributed 45 percent of the balance of receipts to the New York State Cannabis Revenue Fund.

Motor Fuel Tax

MOTOR FUEL TAX RECEIPTS (millions of dollars)								
		FY 2021 Actual	FY 2022 Estimated	Change Dollar	Change Percent	FY 2023 Projected	Change Dollar	Change Percent
Special Revenue Funds (DMTTF)	Gasoline	66.5	76.7	10.2	15.4	76.6	(0.2)	(0.2)
	Diesel	24.2	26.0	1.8	7.3	26.3	0.3	1.3
	Total	90.7	102.7	12.0	13.2	102.9	0.2	0.2
Capital Projects Funds (DHBTF)	Gasoline	293.0	338.0	45.0	15.4	337.3	(0.7)	(0.2)
	Diesel	41.3	44.3	3.0	7.3	44.8	0.6	1.3
	Total	334.3	382.3	48.0	14.4	382.1	(0.2)	(0.0)
All Funds	**Gasoline**	**359.5**	**414.7**	**55.2**	**15.4**	**413.8**	**(0.9)**	**(0.2)**
	Diesel	**65.5**	**70.3**	**4.8**	**7.3**	**71.2**	**0.9**	**1.3**
	Total	**425.0**	**485.0**	**60.0**	**14.1**	**485.0**	**0.0**	**0.0**

FY 2022 receipts are estimated to increase from FY 2021 results due to a significant increase in gasoline consumption and a moderate increase in diesel consumption, mainly attributable to the recovery of economic and travel activity following last year's significant declines from the COVID-19 pandemic's negative impact on the economy.

FY 2023 receipts are projected to remain flat from the current year as gasoline and diesel consumption continue to move towards pre-COVID-19 trends.

Base and Rate

Gasoline motor fuel and diesel motor fuel taxes of $0.08 per gallon are imposed upon the sale, generally for highway use, of motor fuel and diesel motor fuel, respectively. The motor fuel tax is levied primarily on fuel used in motor vehicles operating on the public highways of NYS or on fuel used in recreational motorboats operating on the waterways of NYS. Exemptions, credits, and refunds are allowed for certain other uses of gasoline and diesel motor fuel.

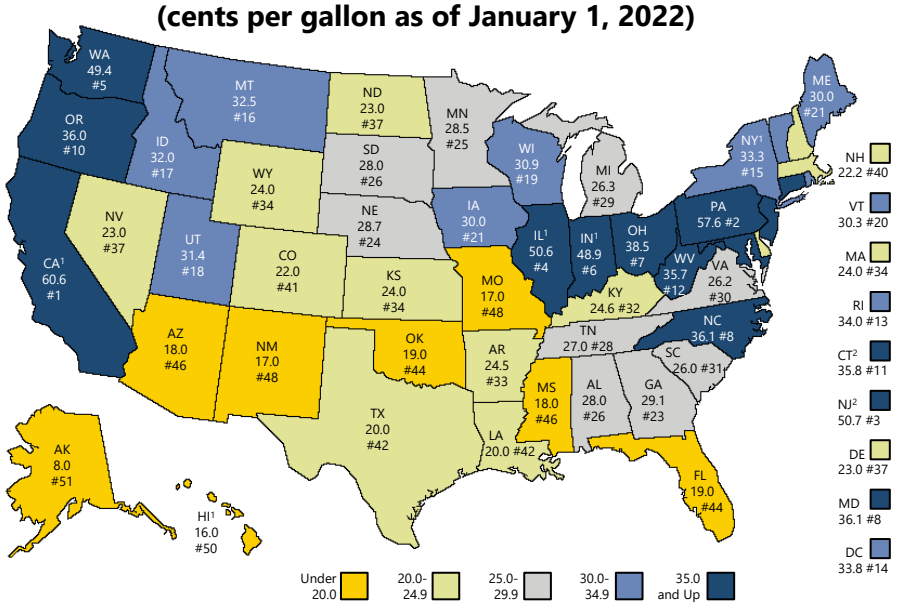
Liability

Although the motor fuel tax is imposed on the consumer, the tax is remitted upon importation into NYS. This tax-on-first-import system is designed to reduce gasoline tax evasion, which previously involved bootlegging from other states and successions of tax-free sales among "dummy" corporations masked by erroneous record keeping and reporting.

Prior to 1988, the diesel motor fuel tax was collected at the time of retail sale or use by a bulk user. Since 1988, taxes on diesel motor fuel have been collected upon the first non-exempt sale in NYS. Interdistributor sales of highway diesel motor fuel sold below the rack are considered tax-exempt.

Compared to other states, NYS is ranked 15th in overall state taxes per gallon imposed on motor fuel.

Total State Tax Rates* on Motor Fuel
(cents per gallon as of January 1, 2022)



*Includes all applicable State taxes (local taxes not included) levied on motor fuel, including:
[1]State sales tax (NYS's rate is capped at 8 cents per gallon); and
[2]other taxes based on the price of fuel.

Prior to the pandemic, gasoline taxable consumption was heavily influenced by prices which in turn are influenced by domestic and international economic conditions. The pandemic-induced reductions in vehicle miles traveled and, therefore, gasoline consumption, disrupted the typical relationship between fuel prices and demand, leading to record-low tax collections along with declining prices. Amidst the more recent global supply chain issues that persisted throughout 2021, the average gasoline price in NYS surpassed the $3.00 per gallon threshold in June 2021 (first time since December 2014), averaging $3.49 per gallon in November 2021. With businesses now open and workers continuing to return to the office, the expectation is that gasoline consumption will continue to increase in the near-term, even with higher prices. It is expected that the typical, pre-COVID-19, relationship between fuel prices and demand will resume. A further discussion of energy prices can be found in the *Economic Backdrop* section of this volume.

Diesel consumption is also heavily correlated with economic activity. After taking a nose-dive during the Great Recession, diesel receipts began to recover slightly, but then began to decline again due to the amount of refunds processed to multiple Wall Street firms that sold off large quantities of tax-paid gallons of highway diesel fuel. These large refunds were paid out for highway diesel motor fuel gallons that were sold outside of NYS up to two years after the tax was originally collected. More recently, the FY 2021 diesel receipts decline is more attributable to the pandemic's adverse impact on travel activities.

Administration

The tax is generally remitted monthly, although vendors whose average monthly tax is less than $200 may remit quarterly. Taxpayers with annual liability of more than $5 million for motor fuel and petroleum business tax (PBT) combined are required to remit taxes electronically, or by certified check on an accelerated timeline, by the 3rd business day following the first 22 days of each month. Taxpayers must make either a minimum payment of 75 percent of the comparable month's tax liability for the preceding year, or 90 percent of actual liability for the first 22 days of the month. Taxes for the balance of the month are remitted by the 20th of the following month.

History

MOTOR FUEL TAX RECEIPTS HISTORY
(millions of dollars)

	Special Revenue Funds (DMTTF)			Capital Projects Funds (DHBTF)			All Funds		
	Gasoline	Diesel	Total	Gasoline	Diesel	Total	Gasoline	Diesel	Total
FY 2012	80	25	105	354	42	396	434	67	502
FY 2013	79	24	103	348	41	389	427	65	492
FY 2014	76	22	99	337	38	374	413	60	473
FY 2015	79	22	101	349	37	386	429	58	487
FY 2016	81	24	105	357	41	398	439	64	503
FY 2017	83	27	109	364	46	410	447	72	519
FY 2018	80	29	109	354	50	403	434	79	513
FY 2019	84	27	111	372	45	417	456	72	528
FY 2020	81	27	108	358	46	404	439	73	512
FY 2021	67	24	91	293	41	334	360	66	425

Significant statutory changes within the past decade include:

- Beginning August 1, 2013, all interdistributor sales of highway diesel motor fuel sold below the rack (i.e., not delivered by truck) are exempt from the tax.

- Originally enacted in 2006, the exemption on alternative fuels (E85, B20, CNG, and hydrogen) has been extended several times for various durations.

Opioid Excise Tax

OPIOID EXCISE TAX (millions of dollars)							
	FY 2021 Actual	FY 2022 Estimated	Change		FY 2023 Projected	Change	
			Dollar	Percent		Dollar	Percent
General Fund	30.0	26.0	(4.0)	(13.3)	26.0	0.0	0.0
All Funds Total	**30.0**	**26.0**	(4.0)	(13.3)	**26.0**	**0.0**	**0.0**

FY 2022 receipts are estimated to moderately decrease from FY 2021 results due to a continued shift towards the sale of lower taxed opioids into the State.

FY 2023 receipts are projected to remain flat as the market is expected to stabilize following the impact of the imposition of the excise tax.

Base and Rate

There is an excise tax on the first sale of an opioid unit in NYS at the following rates:[55]

- $0.0025 on each morphine milligram equivalent (MME) with a wholesale acquisition cost of less than $0.50 per unit; or
- $0.015 on each MME with a wholesale acquisition cost of $0.50 or more per unit.

Liability

Opioid excise tax receipts are primarily a function of demand for the drugs subject to the tax. Overall demand is impacted by the current trend in prescriptions level.

Administration

All first sales of an opioid unit by a registrant in NYS must be reported.[56] Registrants must e-file their calendar quarterly excise tax returns on the 20th of the month following the quarter in which the opioid was sold. The first return was not due until January 21, 2020 covering the period of July 1, 2019 through December 31, 2019. Subsequently, all returns are currently due on the 20th of the following months; January, April, July, and October.

[55] See https://health.ny.gov/professionals/narcotic/docs/opioid_drug_listing.pdf. for a complete list of drugs that are subject to the opioid excise tax.
[56] See https://www.tax.ny.gov/bus/oet/oetidx.htm for more information on those who qualify as a registrant, reporting periods and due dates, and frequently asked questions.

History

OPIOID EXCISE TAX RECEIPTS HISTORY (millions of dollars)		
	General Fund	All Funds Total
FY 2020	19	19
FY 2021	30	30

There have been no significant statutory changes within the past decade.

Sales and Use Tax

SALES AND USE TAX (millions of dollars)								
		FY 2021 Actual	FY 2022 Estimated	Change Dollar	Change Percent	FY 2023 Projected	Change Dollar	Change Percent
General Fund		6,638.8	4,034.3	(2,604.6)	(39.2)	6,342.4	2,308.1	57.2
Debt Service Funds	LGAC	3,317.2	4,034.3	717.0	21.6	2,151.1	(1,883.1)	(46.7)
	STRB	3,317.2	8,068.5	4,751.3	143.2	8,493.5	425.0	5.3
	Total	6,634.4	12,102.8	5,468.3	82.4	10,644.6	(1,458.1)	(12.0)
Special Revenue Funds	MTOA	873.0	1,089.0	216.0	24.7	1,151.0	62.0	5.7
All Funds Total		**14,146.3**	**17,226.0**	**3,079.7**	**21.8**	**18,138.0**	**912.0**	**5.3**

FY 2022 receipts are estimated to increase from FY 2021 results due to the significant recovery in taxable consumption following the COVID-19 economic downturn. For the first three quarters of FY 2022, the sales tax base has increased 43.6 percent, 20.5 percent, and 16.1 percent, respectively. Base increase for the final quarter is estimated to be 10.8 percent. This equates to estimated base growth of 21.5 percent for FY 2022. General Fund receipts are estimated to decrease, largely due to the statutory decrease in the General Fund distribution (from 50 percent to 25 percent). Please see the significant statutory changes section below for further details.

FY 2023 receipts are projected to increase from the current year due to moderate growth in taxable consumption related to the continued economic recovery from the aforementioned COVID-19 economic downturn. The sales tax base is projected to grow 5.2 percent. General Fund receipts are projected to significantly increase, mainly due to the statutory elimination of the Local Government Assistance Tax Fund distribution for the second half of the fiscal year. Please see the significant statutory changes section below for further details.

Base and Rate

Generally, all retail sales of tangible personal property are taxed under Article 28 of the Tax Law unless specifically exempt, but services are taxable only if they are enumerated in Tax Law.[57]

The sales tax base has significantly expanded in the last decade to capture the growing online market. From the 2009 law to expand the vendor definition to include out-of-State sellers with related businesses ("affiliates") in NYS, to the implementation of "Wayfair" regulations, to the most recent marketplace law, these measures have created tax fairness between brick-and-mortar main street businesses and online companies. In addition, effective with the 2003 PIT filing year, the

[57] See https://www.tax.ny.gov/pdf/publications/sales/pub750.pdf for a complete description of the sales tax base.

NYS PIT return contains a line on which taxpayers may enter the amount of use tax owed for the preceding calendar year. This line has captured certain online sales made out-of-State (in which use tax was owed) and large use tax purchases made out-of-State that are used in-State. NYS collected $30.6 million in FY 2020 and $32 million in FY 2021 from this line.

NYS imposes three separate sales and use tax rates.

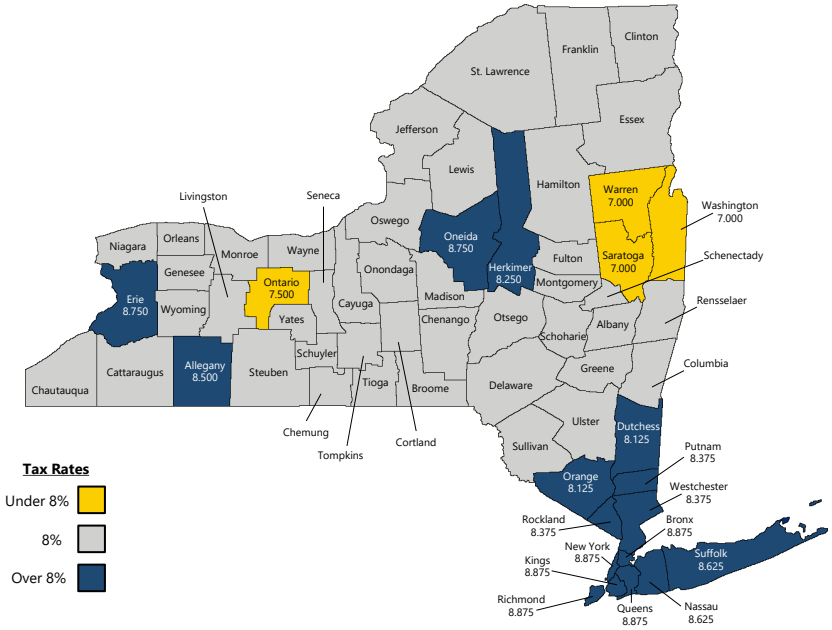
- Since 1971, the State rate has been 4 percent (with a temporary increase to 4.25 percent from June 1, 2003 to June 1, 2005). The State tax rate on motor fuel and diesel motor fuel is capped at $0.08 per gallon.

- Local county rates range from 3 percent to 4.75 percent. Only Seneca County has elected the sales tax cap on motor fuel and diesel motor fuel at $0.08 per gallon.

- An additional 0.375 percent sales and use tax is imposed in the MCTD.

In addition to these rates, there is a five percent State sales tax imposed on the receipts from the sale of telephone entertainment services that are exclusively delivered aurally.

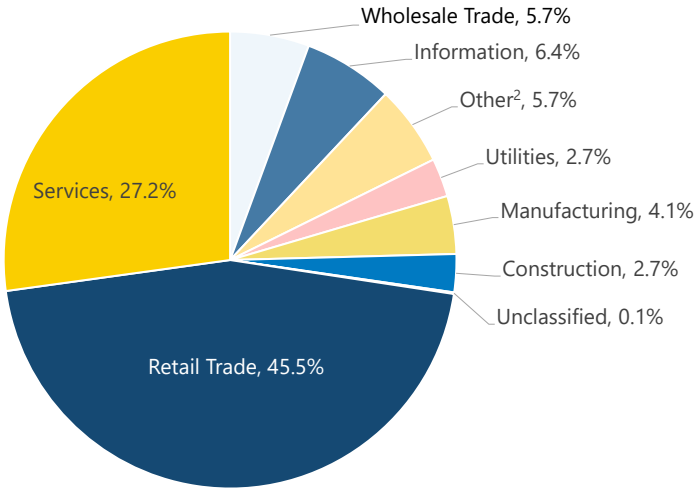
Combined State and Local Sales Tax Rate
Effective January 1, 2022



Liability

The sales and compensating use tax, which accounted for 17.2 percent of FY 2021 All Funds tax receipts, is the second largest NYS tax revenue source. Approximately 73 percent of sales and use tax receipts are derived from retail trade and services industries.

Industry Shares of New York State Sales Tax Receipts
Ten Year Historical Average[1]



[1] Covers March-February fiscal years ending 2012-2021, with 2021 preliminary results.
[2] Includes Agriculture, Mining, Transportation, FIRE (Finance, Insurance and Real Estate), Education, and Government.
Source: New York State Department of Taxation and Finance.

Administration

- Monthly PrompTax: Vendors with annual sales and use tax liability exceeding $500,000 or with an annual liability for prepaid sales tax on motor fuel and diesel motor fuel exceeding $5 million. The payment schedule requires tax for the first 22 days of a month to be paid within 3 business days thereafter.

- Monthly Other: Vendors with more than $300,000 of taxable sales and purchases in any of the immediately preceding four quarters must remit the tax monthly by the 20th of the month following the month of collection.

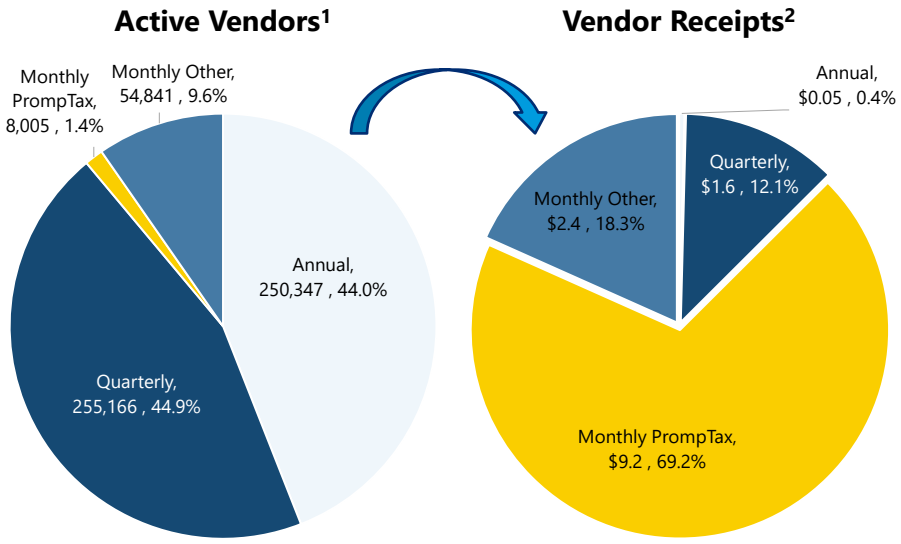
- Annual: Vendors collecting less than $3,000 yearly may elect to file annually, in March.

- Quarterly: All other vendors are quarterly filers.

All filers are subject to a $50 penalty for each failure to e-file, unless the taxpayer can show that the failure was due to reasonable cause.

Quarterly and annual sales tax filers receive a vendor allowance of 5 percent of tax liability, up to a maximum of $200 per quarter for returns filed on time.

Sales Tax Vendors and Taxable Sales



[1]Number of vendors identified as of November 24, 2021.
[2]Vendor receipts in billions of dollars.

History

SALES AND USE TAX RECEIPTS HISTORY (millions of dollars)						
	General Fund	Special Revenue Funds (MTOA)	Debt Service Funds			All Funds Total
			LGAC	STRB	Total	
FY 2012	8,346	750	2,780	0	2,780	11,875
FY 2013	8,423	758	2,809	0	2,809	11,989
FY 2014	5,885	802	2,951	2,951	5,901	12,588
FY 2015	6,084	854	3,027	3,027	6,053	12,992
FY 2016	6,243	874	3,121	3,121	6,243	13,359
FY 2017	6,483	903	3,242	3,242	6,483	13,870
FY 2018	6,777	942	3,388	3,388	6,777	14,495
FY 2019	7,091	963	3,537	3,537	7,074	15,127
FY 2020	7,446	1,049	3,718	3,718	7,437	15,932
FY 2021	6,639	873	3,317	3,317	6,634	14,146

Significant statutory changes within the past decade include:

- In 2014, an additional one percentage point of the four percent State sales tax was shifted from the General Fund to the sales tax revenue bond fund (STRBF).

- In 2017, the sales tax incentives for businesses to locate or relocate in the Murray Street area and lower Manhattan were extended. The lease must begin by September 1, 2020, for the Murray Street exemption and September 1, 2022, for the lower Manhattan exemption. The exemptions expire in December of the following year. These incentives have been in place since 2005.

- In 2019, NYS required marketplace providers to collect sales tax on sales of tangible personal property that they facilitate for marketplace sellers. Additionally, the outdated exemption for the transportation, transmission or distribution of gas or electricity when purchased from ESCOs was eliminated.

- On April 1, 2021, all LGAC obligations were paid or otherwise discharged. As a result:

    - in FY 2022 and for the first half of FY 2023, the deposit to STBF increased to 50 percent (from 25 percent), the deposit to LGAC remained unchanged at 25 percent, while the deposit to the General Fund decreased to 25 percent (from 50 percent); and

- for the second half of FY 2023 and annually thereafter, the portion deposited into STBF will remain unchanged at 50 percent, and the portion deposited to the General Fund will revert back to 50 percent.

- In 2021, NYS clarified when sales tax is due on the full (not discounted) retail price if a rebate, discount, or similar price reduction is used, and the vendor is fully reimbursed by a third-party; modified the sales tax treatment of vehicle leases with terminal rental adjustment clauses (TRACs) to provide lessors with more options to collect and remit sales tax; and eliminated the State racing admissions tax to impose the State sales tax on racing admissions.

Vapor Products Tax

VAPOR PRODUCTS TAX (millions of dollars)								
		FY 2021 Actual	FY 2022 Estimated	Change Dollar	Change Percent	FY 2023 Projected	Change Dollar	Change Percent
Special Revenue Funds	HCRA	32.3	27.0	(5.3)	(16.5)	27.0	0.0	0.0
All Funds Total		**32.3**	**27.0**	**(5.3)**	**(16.5)**	**27.0**	**0.0**	**0.0**

FY 2022 receipts are estimated to decrease from FY 2021 results mainly due to the full-year impact of the ban on all flavored vapor products other than tobacco flavored products.

FY 2023 receipts are projected to remain flat compared to the current year.

Base and Rate

A 20 percent tax is imposed on receipts from the retail sale of vapor products sold in NYS. It is collected by the vapor products dealer and remitted monthly, quarterly, or annually with applicable sales tax returns to DTF. Vapor products include any noncombustible liquid or gel, regardless of the presence of nicotine, that is used in an electronic cigar, cigarillo, pipe, as well as vaping or hookah pens or other similar devices. Vapor products do not include any FDA approved drug or medical device.

Liability

Taxable vapor products consumption is a function of retail vapor product prices and trends in vapor products consumption.

Administration

Vapor products dealers are licensed by the DTF commissioner to sell vapor products in NYS. Dealers apply and register each location or each vending machine in which vapor products are sold. Registered dealers must reapply for the following calendar year annually on or before September 20th.

History

VAPOR PRODUCTS TAX RECEIPTS HISTORY (millions of dollars)		
	Health Care Reform Act (HCRA)	All Funds Total
FY 2020	10	10
FY 2021	32	32

Significant statutory changes within the past decade include:

- In 2020, all flavored vapor products other than tobacco flavored products were banned.

Corporation Franchise Tax

CORPORATION FRANCHISE TAX RECEIPTS (millions of dollars)								
		FY 2021	FY 2022	Change		FY 2023	Change	
		Actual	Estimated	Dollar	Percent	Projected	Dollar	Percent
General Fund	Non-Audits	3,340.2	5,247.0	1,906.8	57.1	6,524.0	1,277.0	24.3
	Audits	549.9	330.0	(219.9)	(40.0)	430.0	100.0	30.3
	Total	3,890.1	5,577.0	1,686.9	43.4	6,954.0	1,377.0	24.7
Special Revenue Funds (MMTOA)	Non-Audits	943.3	1,361.0	417.7	44.3	1,663.0	302.0	22.2
	Audits	120.7	75.0	(45.7)	(37.9)	80.0	5.0	6.7
	Total	1,064.0	1,436.0	372.0	35.0	1,743.0	307.0	21.4
All Funds	**Non-Audits**	**4,283.5**	**6,608.0**	**2,324.5**	**54.3**	**8,187.0**	**1,579.0**	**23.9**
	Audits	**670.6**	**405.0**	**(265.6)**	**(39.6)**	**510.0**	**105.0**	**25.9**
	Total	**4,954.1**	**7,013.0**	**2,058.9**	**41.6**	**8,697.0**	**1,684.0**	**24.0**

FY 2022 receipts are estimated to increase from FY 2021 results, due to robust growth in gross receipts attributable to stronger than expected collections in June, September, and December, supported by an upward revision in corporate profits growth. Tax Year 2021 is also the first year of a three-year period ending after Tax Year 2023 in which legislation included in the FY 2022 Enacted Budget increased the business income rate and restored the capital base for certain taxpayers. Audit receipts are estimated to decrease as fewer large cases are expected to materialize compared to FY 2021. Refunds are estimated to increase and may include refunds from the Restaurant Return-To-Work Tax Credit that was included in the FY 2022 Enacted Budget.

FY 2023 receipts are projected to increase from FY 2022 as gross receipts are expected to continue to increase over the current fiscal year. Audits are expected to increase over FY 2022 while refunds are projected to remain about the same as for the current fiscal year.

Base and Rate

The corporation franchise tax is levied by Articles 9-A and 13 of the Tax Law on a variety of different corporation types, namely: C corporations, S corporations, manufacturers, real estate investment trusts (REITs), and regulated invest companies (RICs).

For C corporations under Article 9-A, corporation franchise tax liability is the highest tax calculated under three alternative bases which are:

- A tax measured by the business income base subject to either a tax rate of 7.25 percent for taxpayers with business incomes above $5 million or 6.5 percent for taxpayers with business incomes of $5 million or less. These rates are reflective of a temporary increase

in these rates applicable for Tax Year 2021 through Tax Year 2023, after which, the tax rate reverts to 6.5 percent. For qualified emerging technology companies (QETC), the tax rate is 4.875 percent regardless of business income, and manufacturers are exempt from this base. For Tax Year 2018, this tax base represents approximately 93 percent of C corporations' tax liability;

- A tax measured by the capital base subject to the rates below, representing approximately five percent of C corporations' liability for Tax Year 2018; and

C CORPORATIONS CAPITAL BASE RATES			
	TY 2020	**TY 2021 through TY 2023**	**TY 2024 & Thereafter**
Corporate Small Business Taxpayers	0.025%	0.000%	0.000%
Qualified New York Manufacturers and QETCs	0.019%	0.000%	0.000%
Cooperative Housing Corporations	0.040%	0.000%	0.000%
All Other Taxpayers	0.025%	0.1875%	0.000%

- A tax measured by the fixed dollar minimum, which represents the remaining two percent of tax liability for Tax Year 2018.

C-Corps conducting business in the MCTD are subject to an additional surcharge of 30.0 percent in TY 2021 and TY 2022. The rate is currently computed annually by DTF, however, the Executive Budget proposes to establish a permanent tax rate to provide taxpayers with certainty regarding tax rates in future years and assist them in planning.

Under Article 9-A, REITs, RICs and S-corps pay the fixed dollar minimum amount.

Under Article 13, a 9 percent tax is imposed on certain not-for-profit entities on business income earned from activities not related to their exempt purpose.

Liability

The link between underlying corporate tax liability and cash receipts in any given SFY is often obscured by the timing of payments, the carry forward of prior year losses or credits and the reconciliation of prior year liabilities. Tax collections are the net payments and adjustments made by taxpayers on returns and extensions over the course of the SFY.

Tax liability in the current year is based on estimated economic performance for the same year. It is generally calculated by using tax bases, tax rates, special deductions and additions, losses, and tax credits. Since taxpayers must pay estimated taxes months in advance of knowing actual liability, it is difficult for taxpayers to determine the proper level of payments needed over the course of a year. This is especially true when business or economic conditions change. Volatility in the

underlying relationship between payments and liability is often compounded by the difference between a taxpayer's tax year and the SFY.

Administration

Corporation franchise taxpayers make quarterly tax payments after their fiscal year ends (FYEs) based on their estimated tax liability, making periodic adjustments to these payments as their actual liability for a given tax year becomes more definite. A final settlement payment is due 106 days from the end date of a taxpayer's fiscal year to reconcile that year's tax liability.

The overwhelming majority of corporation franchise taxpayers have a December 31st FYE, but all taxpayers follow the same quarterly schedule based on their own FYE.

Corporations that reasonably expect their tax liability to exceed $1,000 for the current tax year are required to make a mandatory first installment payment based on their tax liability from two years prior. For corporations expecting a liability of $100,000 or more, the mandatory first installment payment is 40 percent of the corporation's tax liability. The remainder of corporations are required to pay 25 percent of their tax liability.

History

CORPORATION FRANCHISE TAX RECEIPTS HISTORY
(millions of dollars)

	General Fund			Special Revenue Funds (MMTOA)			All Funds		
	Non-Audit	Audits	Total	Non-Audit	Audits	Total	Non-Audit	Audits	Total
FY 2012	1,805	919	2,724	292	161	453	2,097	1,080	3,176
FY 2013	1,964	659	2,624	292	93	385	2,257	752	3,009
FY 2014	2,261	984	3,245	394	173	567	2,654	1,158	3,812
FY 2015	2,470	520	2,990	463	95	558	2,933	615	3,548
FY 2016[1]	3,225	538	3,763	651	114	764	3,587	940	4,527
FY 2017	2,036	439	2,476	602	88	690	2,452	713	3,166
FY 2018	1,764	562	2,326	637	116	754	2,328	752	3,080
FY 2019	2,985	425	3,410	789	98	887	3,773	523	4,297
FY 2020	3,389	403	3,791	931	102	1,033	4,319	505	4,824
FY 2021	3,340	550	3,890	943	121	1,064	4,284	671	4,954

[1]Corporate tax reform merged the bank tax into the corporation franchise tax.

Significant statutory changes within the past decade are:

- The Excelsior Jobs Program is New York State's primary economic development program—making fully refundable tax credits for tax years beginning in 2011, over a benefit period of up to five years, available to qualifying businesses engaged in biotechnology, pharmaceuticals, high tech, green tech, financial services, agriculture, and manufacturing. Since its creation, the Program has: added an energy incentive; lengthened the benefit period from five to ten years; made tax credits more flexible; expanded eligibility to include qualifying business engaged in entertainment, music production, and video game software development; extended the claims period through Tax Year 2039; and increased incentives for a number of targeted industries. In addition to the larger Excelsior Jobs Program, three sub-programs have been created under both its heading and funding:

    - Empire State Jobs Retention Program Tax Credit: Beginning in 2012, qualifying businesses at risk of leaving the State due to a natural disaster were offered a tax credit equal to 6.85 percent of gross wages of jobs retained in New York State.

    - Employee Training Incentive Program Tax Credit: Beginning in Tax Year 2015, qualifying businesses were offered a tax credit equal to 50 percent of employee training or internship costs with a maximum credit allowance of $10,000 per employee and $3,000 per intern, and a $5 million annual allocation cap.

    - Life Sciences Research and Development Tax Credit: Beginning in 2018, existing life science companies were eligible to participate in the Excelsior Jobs Program and new life sciences companies were eligible for a 15 or 20 percent refundable tax credit on new research and development expenditures based on company size.

- In 2021, the Excelsior Jobs Program was expanded to include expenditures for child care services and to create the Excelsior Child Care Services Tax credit for net new child care services expenditures for the operation, sponsorship, or direct financial support of a child care services program. Participants receiving the Excelsior Jobs Program credit are eligible for a five percent Excelsior Investment Tax Credit (above the traditional two percent) for the provision of child care, and a six percent Excelsior Child Care Services Tax Credit for ongoing net new child care expenditures provided by the participant.

- The Empire State Film Production Tax Credit has been expanded and extended five times since its creation in 2004.
    - $420 million has been the annual authorization for the credit effective in 2010, and the credit is currently authorized through Tax Year 2026.
    - $7 million of the credit was dedicated to post production effective in 2010, but this was increased to $25 million in 2015.
    - In 2020, the credit was reduced from 30 percent to 25 percent, a minimum budget requirement of $1 million for films produced in New York City and the counties of

Nassau, Suffolk, Rockland and Westchester ($250,000 if filmed elsewhere in the State) was imposed, and new variety shows were excluded from credit eligibility.

- The New York Youth Works Program was created in 2011, providing a tax credit to businesses employing at-risk youth in part-time or full-time positions.

- The Rehabilitation of Historic Properties Credit is equal to 20 percent of qualified rehabilitation expenditures made by the taxpayer with respect to a qualified historic structure in New York State with a cap of $5 million per structure. Since its creation in 2006, the credit has been extended twice and is effective through Tax Year 2024.

- In 2014, Corporate Tax Reform established a single modern system of taxation for general business corporations and banking corporations by repealing the separate provisions of the Tax Law for banking corporations (Article 32) and amending the business corporation tax under Article 9-A to accommodate changes in the financial services industry and make other modernization changes. This was accomplished by replacing the entire net income base with a similar business income base at a tax rate of 6.5 percent, phasing out the capital base over a six-year period, and making the MTA surcharge permanent.

- Beginning in 2014, the entire net income tax rate for qualified NYS manufacturers, which was 6.5 percent, was eliminated. Those manufacturers are eligible for a non-refundable Property Tax Credit equal to 20 percent of the real property taxes paid.

- In 2015, the Brownfield Clean-Up Program was reformed, and tax credits were extended through FY 2026. Reforms included the prioritization of site redevelopment in economically distressed areas, low-income housing, or properties that are upside down or underutilized. The Program also provided for the creation of an expedited remediation program, gave a more detailed description of eligible costs for redevelopment tax credits, and allowed the real property tax and environmental remediation insurance credits to sunset.

- In 2021, a surcharge on the corporate tax rate was imposed, which temporarily increased the business income tax rate from 6.5 percent to 7.25 percent through Tax Year 2023 for taxpayers with business income greater than $5 million. In addition, the capital base method of liability estimation was temporarily increased through Tax Year 2023 to 0.1875 percent from the prior year 0.025 percent rate. The capital base method temporary increase continues to exempt qualified manufacturers, qualified emerging technology companies, and cooperative housing corporations and additionally exempts corporate small businesses.

- In 2021, two separate programs were enacted to provide critical assistance to the severely impacted by the pandemic food service and entertainment industries:

    - Restaurant Return-to-Work Tax Credit Program: this refundable tax credit is available to small, independently owned restaurants that are located within New

York City, which were subject to a ban on indoor dining for over six months, or outside of New York City in areas that were designated as a red or orange zone for at least 30 days. The credit is only available to restaurants that have experienced year-to-year revenue and/or job losses of 40 percent or more and have increased their employment within certain timeframes. Such restaurants are eligible for a tax credit of $5,000 for each net full-time equivalent position added, up to a maximum cap of $50,000 per business. The total credit under this program is capped at $35 million and may be claimed as an advanced refundable credit. The credit is administered by the Department of Economic Development.

- New York City Musical and Theatrical Production Tax Credit: this refundable tax credit is available to qualified musical and theatrical production companies that produce a musical or theater production in New York City and spend at least $1 million dollars in qualified production expenditures. The program is a two-year program and companies can receive credits for tax years 2021 through 2023. Initial applications must be submitted by December 31, 2022 and final applications no later than 90 days after the production closes or 90 days following the program end date of March 31, 2023, whichever comes first. The tax credit is equal to 25 percent of the sum of its production expenditures incurred, not to exceed $3 million per production company in the first year in which applications are accepted and/or not to exceed $1.5 million per production company in the second year. The amount of credit under this program is capped at $100 million and is administered by the Department of Economic Development.

Corporation and Utilities Tax

CORPORATION AND UTILITIES TAXES (millions of dollars)								
		FY 2021 Actual	FY 2022 Estimated	Change Dollar	Change Percent	FY 2023 Projected	Change Dollar	Change Percent
General Fund		417.3	401.0	(16.3)	(3.9)	420.0	19.0	4.7
Special Revenue Funds (MTOAF)	Transmission Tax	40.7	44.0	3.3	8.1	56.0	12.0	27.3
	MCTD Surcharge	82.0	73.0	(9.0)	(11.0)	80.0	7.0	9.6
	Total	122.7	117.0	(5.7)	(4.6)	136.0	19.0	16.2
Capital Projects Funds	DHBTF	10.2	11.0	0.8	7.3	14.0	3.0	27.3
All Funds Total		**550.3**	**529.0**	**(21.3)**	**(3.9)**	**570.0**	**41.0**	**7.8**

FY 2022 receipts are estimated to decrease from FY 2021 receipts due to the combined effect of a continued decline in telecommunications receipts and lower overall audit collections.

FY 2023 receipts are projected to increase over FY 2022 resulting from a modest increase in utilities receipts and an increase in audit collections by returning to trend levels. In addition, claims for the Utility COVID-19 Debt Relief Credit are now expected to be delayed until FY 2024.

Base and Rate

The corporation and utilities tax is an accumulation of several smaller taxes levied on the telecommunications industry, utilities, and transportation and transmission companies.

A gross receipts tax on telecommunications services is levied at a rate of 2.5 percent on non-mobile telecommunication services, and at 2.9 percent on mobile telecommunication services.

A 2 percent gross receipts tax is imposed on charges for the transportation, transmission, distribution, or delivery of electric and gas utility services for residential customers.

Transportation and transmission companies are taxed both on their gross earnings and their capital stock. A franchise tax of 0.375 percent is levied on the gross earnings of transportation and transmission companies excluding international, interstate, and inter-Local Access Transport Areas (LATAs) services, and 30 percent of intra-LATA gross receipts. In addition, a franchise tax on the capital stock of transportation and transmission companies is imposed at the highest of the following three alternatives:

- 1.5 mills per dollar of the net value of capital stock allocated to NYS;
- 0.375 mills per dollar of par value for each one percent of dividends paid on capital stock if dividends amount to six percent or more; or

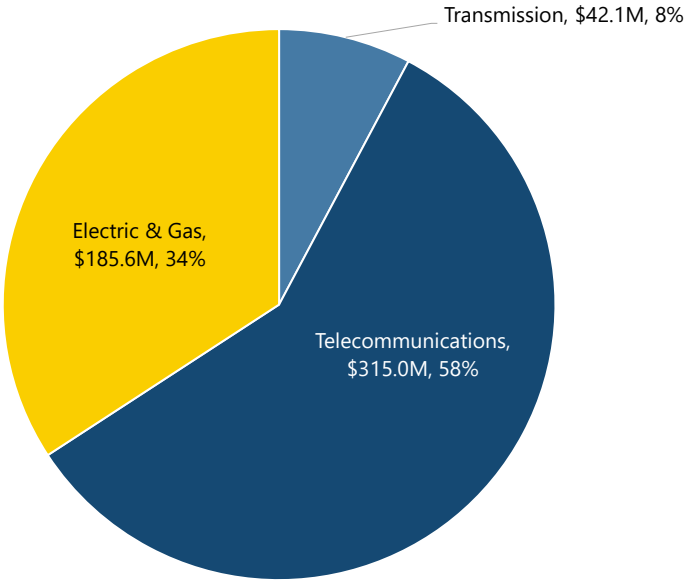
- A minimum tax of $75.

Railroad and trucking companies subject to the corporation and utilities tax are taxed at a rate of 0.375 percent of gross earnings, including an allocated portion of receipts from interstate transportation-related transactions.

Corporation and utilities taxpayers conducting business within the MCTD are subject to a 17 percent surcharge on their MCTD-associated liability, collections from which are directed to the Mass Transportation Operating Assistance Fund.

Liability

2018 Corporation and Utilities Tax Liability by Industry



Administration

Corporation and utilities taxpayers make quarterly tax payments after their fiscal year end (FYE) based on their estimated tax liability, making periodic adjustments to these payments as their actual liability for a given tax year becomes more definite. A final settlement payment is due 106 days from the end date of a taxpayer's fiscal year to reconcile that year's tax liability. Additionally, in March of every year, taxpayers are required to make a mandatory first installment equal to 40 percent of their tax from two tax years prior.

The vast majority of corporation and utilities taxpayers have a December 31st FYE, but all taxpayers follow the same quarterly schedule based on their own FYE.

History

CORPORATION AND UTILITIES TAXES RECEIPTS HISTORY
(millions of dollars)

		Special Revenue Funds (MTOAF)				
	General Fund	Transmission Tax	MCTD Surcharge	SRF Total	Capital Projects Fund (DHBTF)	All Funds Total
FY 2012	617	53	114	167	13	797
FY 2013	686	59	135	194	15	895
FY 2014	615	54	115	169	14	797
FY 2015	576	38	103	141	10	727
FY 2016	594	58	107	165	15	774
FY 2017	538	61	106	167	15	720
FY 2018	570	55	109	164	14	748
FY 2019	495	61	101	162	15	673
FY 2020	518	58	114	172	15	705
FY 2021	417	41	82	123	10	550

Significant statutory changes within the past decade are:

- In 2014, corporate tax reform repealed the organization tax on in-State corporations and the license and maintenance fees on out-of-state corporations.

- In 2015, a State excise tax rate of 2.9 percent and a 0.721 percent MCTD rate was imposed on the sale of mobile telecommunications services.

In 2021, the State authorized a refundable tax credit in the amount of debt that the taxpayer waived that was owed to the taxpayer by customers who received utility arrears assistance pursuant to a State COVID-19 assistance program.

Insurance Taxes

INSURANCE TAXES (millions of dollars)							
	FY 2021	FY 2022	Change		FY 2023	Change	
	Actual	Estimated	Dollar	Percent	Projected	Dollar	Percent
General Fund	1,975.6	2,056.0	80.4	4.1	2,128.0	72.0	3.5
Special Revenue Funds (MMTOA)	214.1	225.0	10.9	5.1	230.0	5.0	2.2
All Funds Total	**2189.7**	**2,281.0**	**91.3**	**4.2**	**2,358.0**	**77.0**	**3.4**

FY 2022 receipts are estimated to increase over FY 2021 due to an increase in base liability, supported by projected growth in taxable premiums and corporate profits, and stronger audit collections. These factors are slightly offset by an increase in refunds over FY 2021.

FY 2023 receipts are projected to increase over FY 2022 due to projected growth in base tax liability. Audits and refunds are expected to decline slightly from FY 2022 levels.

Base and Rate

The State imposes taxes on insurance corporations, insurance brokers, and certain insureds for the privilege of conducting business or otherwise exercising a corporate franchise in NYS. These are grouped into two categories for tax purposes: non-life insurers and life insurers.

Non-life insurers are subject to a premiums-based tax with a $250 minimum tax:

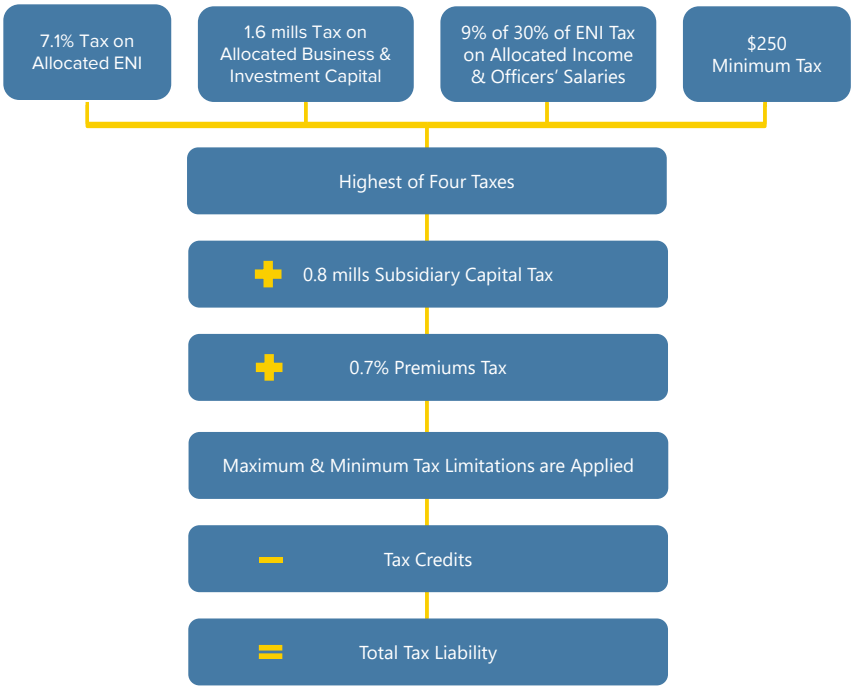
- Accident and health premiums received by non-life insurers are taxed at 1.75 percent; and
- All other premiums received by non-life insurers are taxed at the rate of 2 percent.

The franchise tax on life insurers has two components:

- One component is the highest amount of liability computed under four alternative bases. In addition, this component includes a 0.8 of one mill tax rate, which applies to each dollar of subsidiary capital allocated to NYS. Tax is allocated to NYS under the entire net income (ENI) base by a formula that apportions ENI based on weighted ratios of premiums (with a weight of nine) and wages (with a weight of one) earned or paid in NYS, to total premiums and total wages for all employees for the tax year.
- An additional component is a 0.7 percent tax on gross premiums, less returned premiums, that applies to premiums written on risks located or resident in NYS. This tax is added to the sum of the tax due on the highest of the alternatives from the income base plus the tax

imposed on subsidiary capital. Maximum and minimum tax limitations are computed based on net premiums. Life insurers determine their maximum limitation by multiplying net premiums by 2 percent and their minimum limitation by multiplying net premiums by 1.5 percent, with their total tax calculated within these limits.

The computation of tax on life insurance companies is illustrated below.



Taxpayers conducting business in the MCTD are subject to a 17 percent surcharge on the portion of their tax liability which is attributable to the MCTD area. The collections from the surcharge are deposited into the MTOAF.

There is also a premiums tax imposed on captive insurance companies (i.e., affiliates that insure the risks of the other corporate members) licensed by the Superintendent of the Department of Financial Services (DFS) for the privilege of conducting business or otherwise exercising a corporate franchise in NYS. The tax is imposed on net premiums and net reinsurance premiums (gross premiums less return premiums) written on risks located or residing in NYS at rates which vary based on the amount of net premiums. The top rate is 0.4 percent on direct premiums and 0.225 percent on reinsurance premiums. Captive insurers are subject to a minimum tax of $5,000. Tax credits are not allowed against the tax imposed on captive insurance companies, and these companies are not subject to the MCTD business tax surcharge.

Other Taxes Imposed on Insurers

Article 33-A of the Tax Law imposes a tax at the rate of 3.6 percent of premiums on independently procured insurance. This tax is imposed on any insured purchase or renewal of an insurance contract covering certain property and casualty risks from an unauthorized insurer where the home state of the insured is NYS. An unauthorized insurer is an insurer not authorized to transact business in NYS under a certificate of authority from the Superintendent of DFS.

The Insurance Law imposes a premiums tax on a licensed excess line insurance broker (i.e., covering unique or very large risks) when a policy covering a risk, where the home state of the insured is NYS, is procured through such broker from an unauthorized insurer. Transactions involving a licensed excess lines broker and an insurer not authorized to do business in NYS, are permissible under limited circumstances delineated in Article 21 of the Insurance Law. The tax is imposed at a rate of 3.6 percent of premiums covering risks located in NYS.

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 gave the home state of the insured the sole authority to regulate and collect taxes on these transactions. Generally, the insured's home state is the state where it is headquartered, or in the case of individuals, their place of residence.

The Insurance Law authorizes the Superintendent of DFS to assess and collect retaliatory taxes from a foreign insurance corporation when the overall tax rate imposed by its home jurisdiction on NYS companies exceeds the comparable tax rate imposed by NYS on such foreign insurance companies.

Retaliatory taxes have been employed by the states since the 19th century to ensure a measure of fairness in the interstate taxation of insurance corporations. Retaliatory taxes deter other states from discriminating against foreign corporations and effectively require states with a domestic insurance industry to maintain an overall tax rate on insurance corporations that is generally consistent with other states.

Nevertheless, there are a variety of mechanisms for taxing insurance corporations, and differences in overall tax rates among states are inevitable. NYS provides an additional measure of protection for its domestic insurance industry by allowing domestic corporations to claim a credit under Article 33 of the Tax Law for 90 percent of the retaliatory taxes legally required to be paid to other states.

Liability

The link between underlying insurance tax liability and cash receipts in any given SFY is often obscured by the timing of payments and the reconciliation of prior year liabilities. Tax collections are the net payments and adjustments made by taxpayers on returns and extensions over the course of the SFY.

Tax liability in the current year is based on estimated performance for the same year. It is generally calculated by using premiums, tax bases, tax rates, special deductions and additions, losses, and tax credits. Since taxpayers must pay estimated taxes months in advance of knowing actual liability, it is difficult for taxpayers to determine the proper level of payments needed over the course of a year. This is especially true if business or economic conditions change. Volatility in the underlying relationship between payments and liability is often compounded by the difference between a taxpayer's tax year and the SFY.

NYS property and casualty sector premiums history and growth from 2013 through 2020 are listed below.

NEW YORK STATE CALENDAR YEAR PROPERTY AND CASUALTY INSURANCE PREMIUMS
(millions of dollars)

Insurance Lines	2013	2014	2015	2016	2017	2018	2019	2020
Automobile								
Premiums	13,074	13,584	14,145	15,004	15,876	16,635	17,045	16,802
Growth	3.5%	3.9%	4.1%	6.1%	5.8%	4.8%	2.5%	(1.4%)
Workers' Compensation								
Premiums	5,192	5,261	5,524	5,894	5,943	5,918	5,621	4,750
Growth	9.2%	1.3%	5.0%	6.7%	0.8%	(0.4%)	(5.0%)	(15.5%)
Commercial Multi-Peril								
Premiums	3,488	3,614	3,592	3,659	3,863	3,958	4,097	4,119
Growth	7.3%	3.6%	(0.6%)	1.9%	5.6%	2.5%	3.5%	0.5%
General Liability								
Premiums	4,978	5,314	5,710	5,830	5,647	6,093	6,760	7,259
Growth	11.5%	6.8%	7.5%	2.1%	(3.1%)	7.9%	10.9%	7.4%
Homeowner's Multi-Peril								
Premiums	4,902	5,086	5,196	5,224	5,286	5,397	5,593	5,816
Growth	4.2%	3.8%	2.2%	0.5%	1.2%	2.1%	3.6%	4.0%
Other								
Premiums	6,373	6,436	6,392	6,381	6,295	6,628	6,751	6,809
Growth	3.9%	1.0%	(0.7%)	(0.2%)	(1.4%)	5.3%	1.9%	0.9%
Total Property and Casualty Premiums								
Premiums	**38,005**	**39,294**	**40,558**	**41,993**	**42,908**	**44,629**	**45,867**	**45,555**
Growth	**5.7%**	**3.4%**	**3.2%**	**3.5%**	**2.2%**	**4.0%**	**2.8%**	**(0.7%)**

Source: New York State Department of Financial Services and the NAIC's I-site after 2012.

Administration

Insurance taxpayers make quarterly estimated payments after their fiscal year-end based on their estimated tax liability, making periodic adjustments to these payments as their actual liability for a given tax year becomes more definite. A final settlement payment is due 106 days from the end date of a taxpayer's fiscal year to reconcile that year's tax liability.

The overwhelming majority of insurance taxpayers have a December 31st FYE, but all taxpayers follow the same quarterly schedule based on their own FYE.

Insurers that reasonably expect their tax liability to exceed $1,000 for the current tax year are required to make a mandatory first installment payment based on their tax liability from two years prior. For corporations expecting a liability of $100,000 or more, the mandatory first installment payment is 40 percent of the insurer's tax liability, with the remainder paying 25 percent of their tax liability.

History

INSURANCE TAXES RECEIPTS HISTORY
(millions of dollars)

	General Fund	Special Revenue Funds (MMTOA)	All Funds Total
FY 2012	1,257	157	1,413
FY 2013	1,346	163	1,509
FY 2014	1,298	146	1,444
FY 2015	1,375	158	1,533
FY 2016	1,419	161	1,580
FY 2017	1,410	170	1,580
FY 2018	1,609	168	1,777
FY 2019	1,638	199	1,837
FY 2020	2,053	253	2,306
FY 2021	1,976	214	2,190

Significant statutory changes within the past decade are:

- The Rehabilitation of Historic Properties Credit is equal to 20 percent of qualified rehabilitation expenditures made by the taxpayer with respect to a qualified historic structure in New York State with a cap of $5 million per structure. Since its creation in 2006, the credit has been extended twice and is effective through Tax Year 2024.

- The NYS Low Income Housing Credit (LIHC) is based on the existing Federal program and requires an agreement between the taxpayer and the Division of Housing and Community Renewal (DHCR) for a long-term commitment to low-income housing. The credit amount allocated is allowed as a credit against tax for ten years. Since its creation in 2000, the allocation pool has been increased and extended numerous times and expanded to allow transferability to third parties.

Pass-Through Entity Tax

PASS-THROUGH ENTITY TAX HISTORICAL RECEIPTS (millions of dollars)							
	FY 2021	FY 2022	Change		FY 2023	Change	
	Actual	Estimated	Dollar	Percent	Projected	Dollar	Percent
General Fund	N/A	8,355.0	N/A	N/A	7,540.0	(815.0)	(9.8)
Debt Service Funds (RBTF)	N/A	8,355.0	N/A	N/A	7,540.0	(815.0)	(9.8)
All Funds	**N/A**	**16,710.0**	**N/A**	**N/A**	**15,080.0**	**(1,630.0)**	**(9.8)**

All Funds FY 2022 receipts are estimated to be $16.7 billion, which reflects the entirety of tax year 2021 collections and the first estimated payment for tax year 2022.

All Funds FY 2023 receipts are projected to decrease somewhat as FY 2022 collections contain more than a full year of collections due to timing (full tax year 2021 payments and one tax year 2022 estimated payment). FY 2023 receipts include the final three estimated payments of tax year 2022 and the first tax year 2023 estimated payment. Tax year 2022 liability is projected to increase modestly compared to tax year 2021.

Base and Rate

Pass-through entity tax (PTET) is imposed on an electing entity's pass-through entity (PTE) taxable income. Generally, PTE taxable income includes all income, gain, loss, or deduction that flows through to a direct partner, member, or shareholder for New York personal income tax purposes.

The calculation of PTE taxable income differs between electing New York S corporations and electing partnerships:

S Corporations

An electing New York S corporation calculates its PTE taxable income by aggregating amounts of income, gain, loss, or deduction that flow through for New York income tax purposes to direct members or shareholders who are taxable under Article 22. Aggregated income and gain is reduced by any losses or deductions without regard to any limitations that would be imposed on the member's or shareholder's federal and New York State personal income tax returns. The electing S corporation must then apportion this net amount of taxable income to New York based on the apportionment rules of Article 9-A included in Tax Law Section 210-A.

Electing Partnerships

Before computing its taxable income, an electing partnership is required to classify all direct members or partners that are taxable under Article 22 as a resident or nonresident of New York. Members or partners may not be classified as part-year residents for PTET purposes. An electing

partnership's calculation of its PTE taxable income must include all items of income, gain, loss or deduction, to the extent they would flow through and be included in the taxable income of direct members or partners that are taxable under Article 22, including guaranteed payments. To compute its PTE taxable income, an electing partnership must calculate both their resident PTE taxable income pool and their nonresident PTE taxable income pool together. The electing partnership must then aggregate any amounts of income and gain that flow through to the resident individual members or partners and the nonresident individual members or partners without regard for any limitations that would be imposed on the member's or partner's federal and New York State income tax returns.

Calculating the PTET

For each tax year beginning on or after January 1, 2021, PTET is imposed on each electing entity's PTE taxable income. This tax is in addition to any other taxes imposed on the entity under the Tax Law and is determined as follows:

PASS-THROUGH ENTITY TAX RATES

If the PTE taxable income is:	then the PTET due is:
$2 million or less	6.85% of PTE taxable income
greater than $2 million but less than or equal to $5 million	$137,000 plus 9.65% of the excess of PTE taxable income greater than $2 million.
greater than $5 million but less than or equal to $25 million	$426,500 plus 10.30% of the excess of PTE taxable income greater than $5 million
Greater than $25 million	$2,486,500 plus 10.90% of the excess of PTE taxable income greater than $25

Liability

Beginning January 1, 2021, qualifying entities, such as partnerships and S corporations, may opt into the PTET and elect to pay a tax of up to 10.9 percent on the New York-sourced taxable income at the partnership or corporate level. If a partnership or New York S corporation elects to pay PTET, partners, members, or shareholders of an electing partnership or New York S corporation who are subject to tax under Article 22 may be eligible for a PTET credit on their New York State income tax returns.

The program also includes a resident tax credit that allows for reciprocity with other states that have implemented substantially similar taxes, which currently include Connecticut and New Jersey.

Administration

The PTET under Article 24-A is an optional tax that partnerships or New York S corporations may annually elect to pay on certain income for tax years beginning on or after January 1, 2021.

Beginning January 1, 2022, eligible entities may opt into the PTET on or after January 1 but not later than March 15 for each tax year. The election to opt into the PTET must be made online on an annual basis and is irrevocable.

For PTET tax years beginning on or after January 1, 2022, electing entities must make quarterly tax payments in an amount equal to at least 25 percent of the required annual payment for the taxable year. The required annual payment is the lesser of:

- 90 percent of the PTET required to be shown on the return of the electing entity for the taxable year; or

- 100 percent of the PTET shown on the return of the electing entity for the preceding PTET taxable year.

PTET estimated payments will only be applied to the PTET liability and cannot be applied to any other taxes. In addition, payments may not be transferred between related entities or individuals. Penalties and interest will apply to underpayments or late payments based on the rules in Article 22.

The PTET annual return is generally due on March 15 after the close of the PTET taxable year. However, the electing entity can request a six-month extension of time to file. The extension is an extension of time to file the annual return; it is not an extension to pay any tax due. The electing entity must pay all of the PTET by the original due date of the return, or penalties for failure to pay taxes due are applicable.

Petroleum Business Taxes

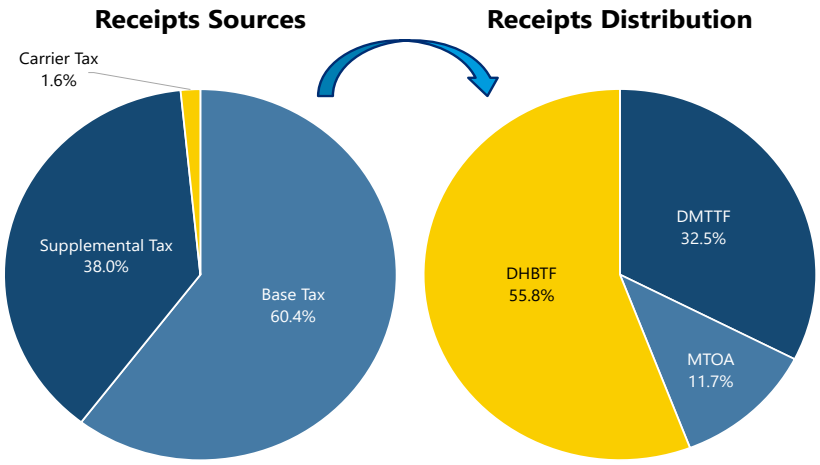
PETROLEUM BUSINESS TAXES (millions of dollars)									
			FY 2021 Actual	FY 2022 Estimated	Change Dollar	Change Percent	FY 2023 Projected	Change Dollar	Change Percent
Receipts Sources		Base Tax	568.8	623.3	54.5	9.6	651.6	28.2	4.5
		Supplemental Tax	358.0	395.4	37.4	10.4	413.1	17.7	4.5
		Carrier Tax	15.2	16.3	1.1	7.4	16.4	0.1	0.5
		Total Taxes	**942.0**	**1,035.0**	**93.0**	**9.9**	**1,081.0**	**46.0**	**4.4**
Fund Distribution	Capital Projects Funds (DHBTF)		525.7	579.8	54.0	10.3	605.2	25.5	4.4
	Special Revenue Funds	DMTTF	306.5	335.6	29.1	9.5	350.5	15.0	4.5
		MTOA	109.8	119.7	9.9	9.0	125.2	5.6	4.6
		Total	416.3	455.2	39.0	9.4	475.8	20.5	4.5
	All Funds Total		**942.0**	**1,035.0**	**93.0**	**9.9**	**1,081.0**	**46.0**	**4.4**

FY 2022 receipts are estimated to increase from FY 2021 results due to a significant increase in gasoline consumption and a moderate increase in diesel consumption, following last year's decline attributable to the significant adverse impact of COVID-19 on the economy and travel activity that resulted in record-low tax collections. Additionally, receipts are further impacted by the five percent decline in the PBT rate index effective January 1, 2021, paired with a five percent increase in the PBT rate index effective January 1, 2022.

FY 2023 receipts are projected to increase from the current year due to the five percent increase in the PBT rate index effective January 1, 2022, coupled with an estimated five percent increase in the PBT rate index effective January 1, 2023.

Petroleum business tax receipts derived from motor fuel and diesel motor fuel are assumed to follow the same consumption trends as fuel subject to the motor fuel excise tax (refer to *Motor Fuel Tax* section of this volume). In terms of the share of PBT base and supplemental receipts in FY 2021, gasoline and diesel receipts based on reported gallonage constituted 84 and 15 percent of the total, respectively.

FY 2021 Actual PBT Resources



Base and Rate

Article 13-A of the Tax Law imposes a tax on petroleum businesses for the privilege of operating in NYS, based upon the quantity of various petroleum products imported for sale or use in NYS. PBT rates have two components: the base tax, whose rates vary by product type; and the supplemental tax, which, in general, is imposed at a uniform rate. The following product types are subject to the petroleum business tax:

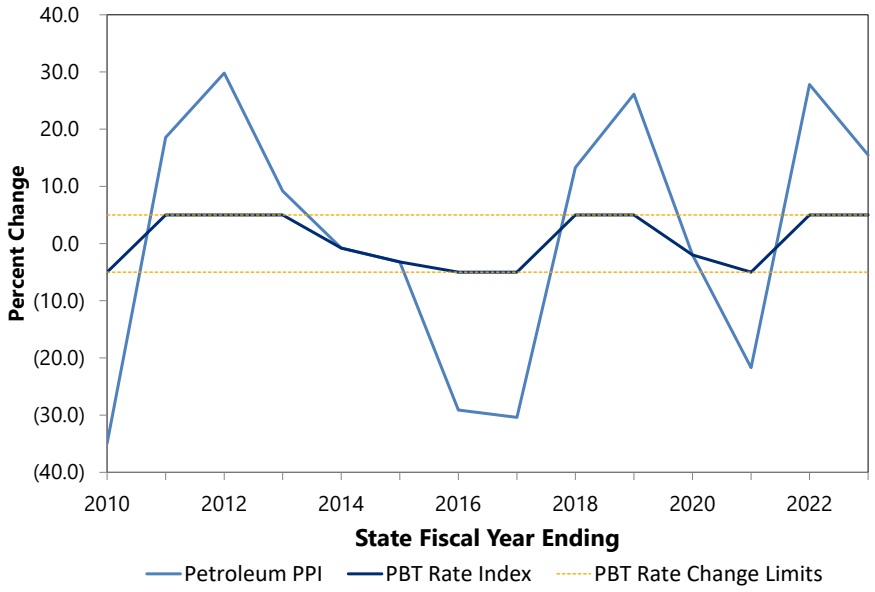
- automotive fuel;
- aviation gasoline or kerosene-jet fuel;
- non-highway use diesel fuels;
- railroad diesel fuel; and
- residual petroleum products.

Tax rates are indexed with annual adjustments made on January 1st of each year to the base and supplemental tax rates to reflect the percent change in the producer price index (PPI) for refined petroleum products for the 12 months ending August 31st of the preceding year. To prevent significant changes in tax rates resulting from large changes in the petroleum PPI, tax rates cannot increase or decrease by more than five percent per year. In addition to the five percent cap on tax rate changes, the statute requires, in general (i.e., excluding diesel), that the base and supplemental tax rates each be rounded to the nearest tenth of one cent. As a result, the percentage change in tax rates is usually less than the five percent limit. Refer to DTF Publication 908 for specific tax indexes.

Based on changes in the petroleum PPI, the PBT rate index declined by five percent effective January 1, 2021, and increased by five percent effective January 1, 2022. The petroleum PPI is

estimated to increase by 21.7 percent from September 2021 through August 2022, resulting in an estimated five percent increase in PBT rates effective January 1, 2023.

Petroleum Producer Price and PBT Rate Indexes



The *Motor Fuel Tax* section of this volume contains a map that ranks New York State 15th in combined fuel taxes imposed among the 50 states and the District of Columbia.

Liability

PBT receipts are primarily a function of the number of gallons of fuel imported into NYS by distributors. Taxable gallonage is largely determined by overall fuel prices, the number of gallons held in inventories, the fuel efficiency of motor vehicles and overall State economic performance.

Administration

The tax is collected monthly in conjunction with NYS motor fuel tax (Article 12-A). Article 13-A also imposes the petroleum business carrier tax on fuel purchased outside NYS and consumed within NYS. The carrier tax is collected quarterly along with the fuel use tax portion of the highway use tax (refer to *Highway Use Tax* section of this volume).

Businesses with annual motor fuel and petroleum business tax liability of more than $5 million are required to electronically remit their tax liability for the first 22 days of the month, within 3 business days after that date. Taxpayers may make either a minimum payment of 75 percent of the comparable month's tax liability for the preceding year, or 90 percent of actual liability for the first

22 days. The tax for the balance of the month is paid with the monthly returns filed by the 20th of the following month.

History

PETROLEUM BUSINESS TAX RECEIPTS HISTORY
(millions of dollars)

	Receipts Sources				Fund Distribution			
	Base Tax	Supplemental Tax	Carrier Tax	Total Taxes	Capital Projects Funds (DHBTF)	Special Revenue Funds DMTTF	Special Revenue Funds MTOA	All Funds Total
FY 2012	661	419	19	1,100	612	359	129	1,100
FY 2013	688	430	21	1,140	634	372	134	1,140
FY 2014	704	429	22	1,155	641	376	137	1,155
FY 2015	700	436	22	1,158	644	378	136	1,158
FY 2016	677	426	20	1,124	625	367	132	1,124
FY 2017	682	423	18	1,124	624	367	133	1,124
FY 2018	664	413	15	1,092	608	355	129	1,092
FY 2019	705	444	16	1,165	654	376	135	1,165
FY 2020	705	437	18	1,161	652	374	135	1,161
FY 2021	569	358	15	942	526	306	110	942

Significant statutory changes within the past decade include:

- Beginning August 1, 2013, all interdistributor sales of highway diesel motor fuel sold below the rack (i.e., not delivered by truck) are exempt from tax.
- Originally enacted in 2006, the exemption on alternative fuels (E85, B20, CNG, & hydrogen) has been extended several times for various durations.
- Effective in 2016, all revenues collected from the PBT on aviation fuel are set aside for airport use in accordance with Federal regulations.

Authorized Combative Sports Tax

AUTHORIZED COMBATIVE SPORTS TAX (millions of dollars)							
	FY 2021	FY 2022	Change		FY 2023	Change	
	Actual	Estimated	Dollar	Percent	Projected	Dollar	Percent
General Fund	0.1	1.8	1.7	2,408.3	2.0	0.2	11.1
All Funds Total	**0.1**	**1.8**	**1.7**	**2,408.3**	**2.0**	**0.2**	**11.1**

FY 2022 receipts are estimated to substantially increase from FY 2021 results due to the impact of COVID-19 limiting the number of premier events held in the State during the prior year.

FY 2023 receipts are expected to remain roughly flat as the number of high-profile events is expected to be similar to the prior year.

Base and Rate

Authorized combative sports fall into one of two categories for NYS tax purposes.

- The following is levied on boxing, sparring, and wrestling events:
    - A 3 percent tax on gross receipts from ticket sales (with a maximum of $50,000 in taxes due per event); plus
    - A 3 percent tax on gross receipts from broadcasting rights (with a maximum of $50,000 in taxes due per event).
- The following is levied on kick boxing, single discipline martial arts, and mixed martial arts events:
    - An 8.5 percent tax on gross receipts from ticket sales (no maximum amount of taxes due per event); plus

      A 3 percent tax on gross receipts from broadcasting rights and digital internet streaming (with a maximum of $50,000 in taxes due per event).

Liability

Authorized combative sports tax liability is largely affected by participant popularity and the number of high-profile events held in a given State Fiscal Year.

Administration

Taxes on gross receipts from ticket sales are remitted to DTF no later than 10 days after the event. Taxpayers remit combative sports taxes on gross receipts from broadcasting rights and digital internet streaming (kick boxing, single discipline martial arts, or mixed martial arts events, only) to DTF by the end of the month in which the event occurred (or within the first five days of the following month if the event occurred in the last five days in a month).

History

AUTHORIZED COMBATIVE SPORTS TAX RECEIPTS HISTORY (thousands of dollars)

	General Fund	All Funds Total
FY 2012	413	413
FY 2013	658	658
FY 2014	645	645
FY 2015	627	627
FY 2016	871	871
FY 2017	2,378	2,378
FY 2018	2,033	2,033
FY 2019	1,959	1,959
FY 2020	1,661	1,661
FY 2021	72	72

Significant statutory change within the past decade is:

- In 2016, the tax base was expanded to include kick boxing, single discipline martial arts, and mixed martial arts events.

Employer Compensation Expense Program

EMPLOYER COMPENSATION EXPENSE PROGRAM TAXES (thousands of dollars)							
	FY 2021	FY 2022	Change		FY 2023	Change	
	Actual	Estimated	Dollar	Percent	Projected	Dollar	Percent
General Fund	1.6	6.4	4.8	296.9	6.9	0.5	7.4
Debt Service Funds (RBTF)	1.6	6.4	4.8	296.9	6.9	0.5	7.4
All Funds	**3.2**	**12.8**	**9.6**	**296.9**	**13.8**	**0.9**	**7.4**

All Funds FY 2022 receipts are estimated to increase substantially from FY 2021 results, reflecting increases in participation and the applicable tax rate. The projected effect of wage changes on ECEP tax growth is minimal.

All Funds FY 2023 receipts are projected to increase driven by wage growth coupled with continued increases in participation and the applicable tax rate.

Base and Rate

Employers electing to participate in the program are subject to a State tax on all annual payroll expenses in excess of $40,000 per employee. The tax rate was 1.5 percent in 2019 and 3 percent in 2020. The tax rate is 5 percent for all years after 2020.

Liability

ECEP liability is a function of salaries earned by employees of participating employers and the applicable tax rate. Since liability is generated on a calendar year basis, collections in any given SFY will be a combination of liability from two distinct calendar years.

Administration

Employers wishing to participate in the ECEP during a given year must enroll with the DTF by December 1st of the preceding year. Employers may not deduct from an employee's wages an amount representing all or any portion of ECEP taxes.

Participating employers remit ECEP tax payments electronically with withholding tax payments, within three days of the respective payroll date. Taxpayers making quarterly withholding payments also make quarterly ECEP tax payments, due the last business day of the month following the end of the calendar quarter in which the taxpayer made the payroll (e.g., January 31st for the calendar quarter ending December 31st).

History

EMPLOYER COMPENSATION EXPENSE PROGRAM RECEIPTS HISTORY (thousands of dollars)			
	General Fund	RBTF	All Funds Total
FY 2019[1]	26	26	53
FY 2020	997	997	1,994
FY 2021	1,613	1,613	3,227

1. ECEP receipts were first received in January 2019, in the last quarter of FY 2019.

The ECEP was established in 2018, with Tax Year 2019 as the first year of participation eligibility. Participating employers pay an optional tax intended to mitigate the tax burden for employees affected by the SALT deduction limit. While the TCJA limits deductibility for individuals, it does not cap deductibility for ordinary and necessary business expenses paid or incurred by employers in carrying on a trade or business.

Estate Tax

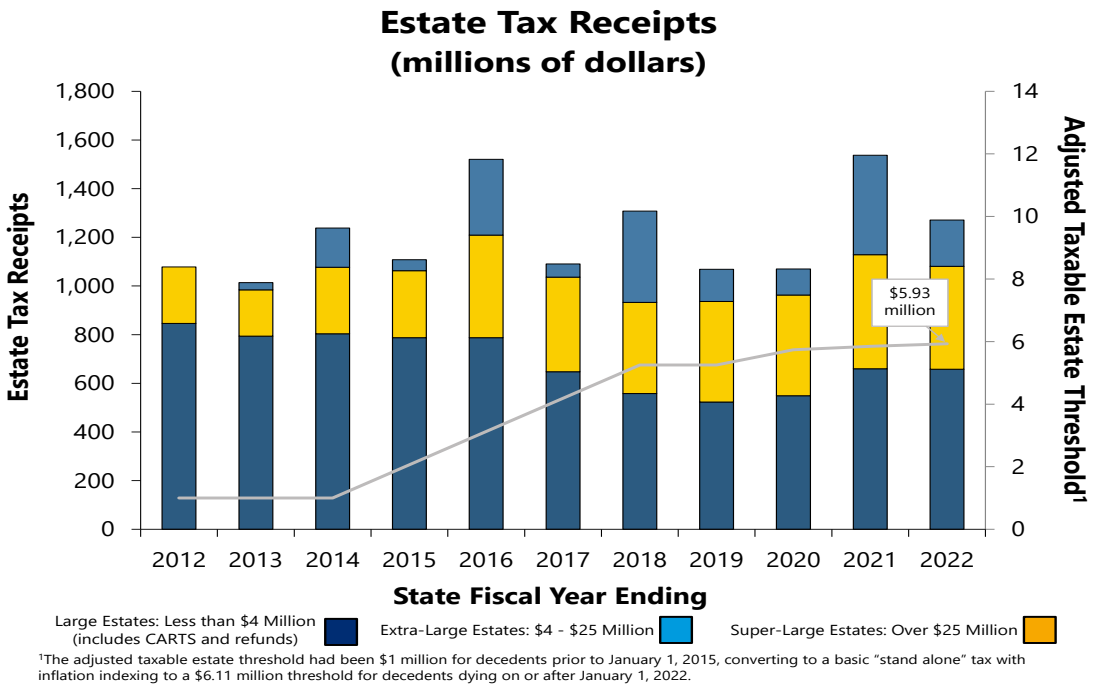
ESTATE TAXES (millions of dollars)											
		FY 2021 Actual		FY 2022 Estimated		Receipts Change		FY 2023 Projected		Receipts Change	
		Number	Receipts	Number	Receipts	Dollar	Percent	Number	Receipts	Dollar	Percent
General Fund	Large	525	659.7	554	658.1	(1.6)	(0.2)	522	706.3	48.2	7.3
	Extra-Large	57	469.1	49	422.9	(46.2)	(9.8)	45	469.7	46.8	11.1
	Super-Large	7	408.6	6	190.0	(218.6)	(53.5)	3	90.0	(100.0)	(52.6)
	Total	589	1,537.4	609	1,271.0	(266.4)	(17.3)	570	1,266.0	(5.0)	(0.4)
All Funds		**589**	**1,537.4**	**609**	**1,271.0**	**(266.4)**	**(17.3)**	**570**	**1,266.0**	**(5.0)**	**(0.4)**

FY 2022 receipts are estimated to decrease substantially from FY 2021 results primarily due to the receipt of seven super-large payments which generated $408.6 million in the prior year.

FY 2023 receipts are projected to remain roughly flat compared to the current year mainly due to projected growth in household net worth offset by a return to a typical amount of super-large payments.

Base and Rate

NYS imposes a tax on the estates of deceased NYS residents and on the part of a non-resident's estate made up of real and tangible personal property located within NYS, less applicable deductions.[58] Based on the Federal Internal Revenue Code estate tax provisions, with minor modifications, NYS estate taxes are levied on a graduated scale with rates ranging from 3.06 to 16 percent of adjusted taxable estates.[59]



Liability

Estate tax receipts are historically volatile, as receipts are heavily influenced by both annual variations in the relatively small number of extra-large and super-large estates and the value of the equity market, given the large component of corporate stock in large taxable estates.

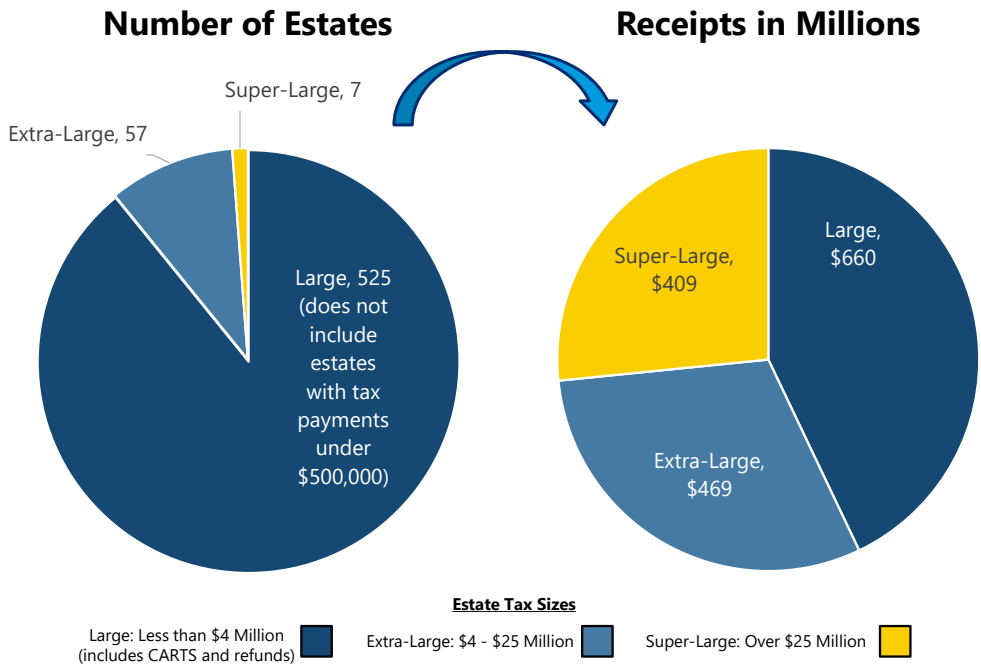
Administration

In general, estate tax is due to DTF nine months following the decedents death, with daily compounding interest charged on late payments. The DTF Commissioner may authorize a 12-month extension, or up to a 4-year extension in cases of undue hardship. The Surrogate Court has jurisdiction of the probate of the estate and the authority to finalize the amount of the estate tax owed.

[58] NYS follows Federal Guidelines for applicable estate tax deductions. See https://www.irs.gov/pub/irs-pdf/i706.pdf.
[59] See https://www.tax.ny.gov/pit/estate/etidx.htm for specific metrics on these provisions and rates.

The executor and beneficiaries who have received property are personally liable for the payment of the estate tax. In cases lacking a will, the Federal, NYS, and foreign death taxes are apportioned among the beneficiaries. Reciprocity with other states for the collection of inheritance and estate taxes aids NYS in the collection of non-resident estates.

FY 2021 Estate Tax Receipts by Estate Size



History

ESTATE TAX RECEIPTS HISTORY (millions of dollars)							
	Super-Large Estates (Over $25 Million)		Extra-Large Estates ($4 - $25 Million)		Large Estates* (Less than $4 Million)		Total Estate Taxes
	Number	Taxes	Number	Taxes	Number*	Taxes	
FY 2012	0	0	30	232	306	846	1,078
FY 2013	1	30	24	190	273	794	1,014
FY 2014	4	161	32	273	285	804	1,238
FY 2015	1	45	37	276	285	787	1,108
FY 2016	6	312	49	421	358	788	1,521
FY 2017	2	54	42	389	385	647	1,091
FY 2018	6	375	50	375	409	558	1,308
FY 2019	3	132	50	413	466	523	1,068
FY 2020	3	107	46	414	446	549	1,070
FY 2021	7	409	57	469	525	660	1,537

*Large Estates include CARTS and refunds; number of payments excludes estates with tax payments under $500,000.

Significant statutory changes within the past decade include:

- In 2014, a “stand alone” NYS estate tax was created. With a basic threshold amount that increased over four years, it equaled what would have been the Federal basic exemption amount (pursuant to Federal law as it existed on December 1, 2017) beginning January 1, 2019. The basic threshold amount, which is indexed to inflation on an annual basis, is $6.11 million for decedents dying on or after January 1, 2022.

Gaming Receipts

GAMING RECEIPTS (millions of dollars)									
			FY 2021 Actual	FY 2022 Estimated	Change Dollar	Change Percent	FY 2023 Projected	Change Dollar	Change Percent
Special Revenue Funds	Lottery	Education	2,426.0	2,601.5	175.5	7.2	2,547.0	(54.5)	(2.1)
	VLTs	Education	382.2	1,002.0	619.8	162.2	990.0	(12.0)	(1.2)
	Casinos	Education	63.2	135.2	72.0	113.9	136.0	0.8	0.6
		Localities	15.8	33.8	18.0	113.9	34.0	0.2	0.6
		Total	79.0	169.0	90.0	113.9	170.0	1.0	0.6
	Mobile Sports Wagering	Education	0.0	248.0	248.0	-	346.0	98.0	39.5
		Youth Sports	0.0	0.5	0.5	-	5.0	4.6	1,011.1
		Problem Gambling	0.0	0.5	0.5	-	6.0	5.6	1,233.3
		Total	0.0	248.9	248.9	-	357.0	108.1	43.4
	IFS	Education	5.6	7.0	1.4	25.9	7.0	0.0	0.0
	TSC	State	32.9	479.4	446.5	1,357.1	136.9	(342.6)	(71.5)
		Localities	26.7	188.6	161.9	607.6	82.8	(105.8)	(56.1)
		Total	59.6	668.0	608.4	1,021.7	219.6	(448.4)	(67.1)
All Funds		**Education**	**2,877.0**	**3,993.7**	**1,116.7**	**38.8**	**4,026.0**	**32.3**	**0.8**
		State	**32.9**	**479.4**	**446.5**	**1,357.1**	**136.9**	**(342.6)**	**(71.5)**
		Localities	**42.5**	**222.4**	**179.9**	**423.8**	**116.8**	**(105.6)**	**(47.5)**
		Total	**2,952.3**	**4,696.4**	**1,744.1**	**59.1**	**4,290.6**	**(405.8)**	**(8.6)**

FY 2022 receipts compared to FY 2021 results:

- Traditional lottery (lottery) receipts are estimated to increase primarily due to the lower base in FY 2021. COVID-19 had a negative impact on sales in the first quarter of FY 2021. Additionally, there is more administrative surplus available for education than is typical.

- VLT receipts are estimated to increase significantly due to the lower base in FY 2021. Due to COVID-19, VLT facilities were required to be closed from April through August 2020 and were able to reopen, starting September 9, 2020, with a 25 percent capacity restriction. Capacity restrictions were rescinded effective June 15, 2021.

- Commercial gaming (casino) tax receipts are estimated to increase significantly due to the same reasons noted above for VLT receipts.

- Mobile Sports Wagering became operational in January 2022, with eight platform provider license fees paid generating $200 million.

- IFS receipts are estimated to increase due to the lower base in FY 2021. Certain professional sporting events were cancelled during the initial wave of COVID-19.

- TSC receipts are estimated to increase substantially primarily due to the anticipated receipt of outstanding payments owed by the Seneca Nation since the onset of FY 2018, as well as facility closures over the first quarter of FY 2021.

FY 2023 receipts compared to current year estimates:

- Lottery receipts are projected to decrease slightly due to the aforementioned more than typical administrative surplus available for education in the current year.

- VLT receipts are projected to decrease slightly primarily due to a greater amount of additional commission being paid out in FY 2023 compared to the current year.

- Casino receipts are projected to remain relatively flat after reaching pre-pandemic levels earlier than expected.

- IFS receipts are projected to remain flat as sports leagues return to typical schedules.

- Mobile Sports Wagering receipts are projected to increase substantially due to the first full-year impact alongside expected growth as the market matures.

- TSC receipts are projected to decrease significantly reflecting a return to the regular payment schedule from the Seneca Nation to NYS.

Base and Rate

Gaming revenue includes receipts from lottery games, VLTs, casinos, IFS, and TSC.

Traditional Lottery

There are two types of lottery games:

- Draw games include Cash4Life, Lotto, Mega Millions, Numbers, Powerball, Quick Draw, Pick 10, Take 5 and Win 4. In FY 2021, these games constituted approximately 67 percent of the education contribution from traditional lottery games.

- Instant scratch-off games have either a 64.25 or 74.25 percent prize-payout. In FY 2021, these games constituted approximately 33 percent of the education contribution from traditional lottery games.

The statutory distribution of lottery sales among prizes, education funding, and the remaining allowance for expenses related to game administration is shown below.

LOTTERY RECEIPTS DISTRIBUTION AND DRAWING FREQUENCY

Lottery Game	Prize Payouts	Education Funding	Administrative Allowance	Inception Date	Drawing Frequency
Mega Millions*	50%	35%	15%	2002	Tuesday and Friday at 11:00 PM
Powerball*	50%	35%	15%	2010	Monday, Wednesday, and Saturday at 10:59 PM
Cash4Life	55%	35%	10%	2014	Once Daily
Lotto	40%	45%	15%	1976	Wednesday and Saturday at 8:15 PM
Numbers	50%	45%	5%	1980	Twice Daily
Win 4	50%	45%	5%	1981	Twice Daily
Pick 10	50%	45%	5%	1988	Once Daily
Take 5	50%	45%	5%	1992	Twice Daily
Quick Draw	60%	25%	15%	1995	Every four minutes
Instant (65%)	65%	20%	15%	1999	N/A
Instant (75%)	75%	10%	15%	2002	N/A

*Mega Millions and Powerball can offer a prize payout up to 55 percent.

Video Lottery Gaming

VLTs are in use at Batavia Downs Gaming, Empire City Casino by MGM Resorts, Finger Lakes Gaming & Racetrack, Hamburg Gaming, Jake's 58 (Suffolk OTB facility), Resorts World Casino (which also hosts the Nassau OTB machines), Saratoga Casino, and Vernon Downs Casino. In FY 2021, approximately 61 percent of the education funding contribution from VLT facilities was derived from Resorts World and Empire City. Empire Resorts plans to open a new VLT facility in Newburgh to replace the Monticello facility, which closed in 2019.

The statutory distribution of VLT NMI (after prize payouts) is among education funding, agent commission, and the remaining allowance for administration expenses.

VLT RECEIPTS DISTRIBUTION BY LOCATION (After Prize Payouts)	Education Funding	Agent Commission	Administrative Allowance
Hamburg Gaming at the Fairgrounds Vernon Downs Casino & Hotel	34.0%	56.0%	10.0%
Batavia Downs Gaming	39.0%	51.0%	10.0%
Resorts World Casino New York City	40.0%	50.0%	10.0%
Nassau Downs OTB at Resorts World Casino New York City Jake's 58 Hotel & Casino	45.0%	45.0%	10.0%
Saratoga Casino Hotel	50.5%	39.5%	10.0%
Empire City Casino at Yonkers Raceway	50.5%	39.5%	10.0%
Finger Lakes Gaming & Racetrack	52.5%	37.5%	10.0%

Saratoga and Finger Lakes currently receive an additional commission (capped at 10 percent) to offset the reduction in revenues due to competition from a nearby casino. Vernon Downs can receive a 6.4 percent additional commission and retain up to an additional 7.5 percent out of the 10 percent administrative allowance, provided such financial relief does not cause it to more than break even (specific to the administrative allowance only) and it maintains certain employment requirements.

Commercial Gaming

Four casinos are licensed and operating in NYS:

- Tioga Downs Casino Resort opened in December 2016;
- del Lago Resort & Casino and Rivers Casino & Resort both opened in February 2017; and
- Resorts World Catskills opened in February 2018.

COMMERCIAL GAMING TAXES LEVIED (Percent of Gross Gaming Revenue Generated)		
	Table Games*	**Slot Machines**
del Lago Resort & Casino	10.0%	30.0%
Tioga Downs Casino Resort	10.0%	37.0%
Resorts World Catskills	10.0%	30.0%
Rivers Casino & Resort	10.0%	30.0%
*Table game revenue includes retail sports wagering.		

In FY 2021, Resorts World Catskills' slot tax rate was reduced from 39 to 30 percent for five years, Rivers Casino and Resort's slot tax rate was reduced from 45 percent to 30 percent for five years, and del Lago Resort and Casino's slot tax rate was reduced from 37 percent to 30 percent for five years. Legislation proposed with this Budget would authorize the three remaining casino licenses.

Tribal State Compact

NYS has TSC agreements with three Nations:

- Seneca Nation operates three Class III casinos in the Western region including Seneca Niagara Casino (2002), Seneca Allegany Casino (2004), and Seneca Buffalo Casino (2007);
- Mohawk Nation operates the Class III Akwesasne Mohawk Casino (1999); and
- Oneida Nation operates four Class III casinos, Turning Stone (1993), Yellow Brick Road (2015), Point Place (2018) and Lake House Casino (2020).

Pursuant to these TSCs, each Nation directs 25 percent of the casino's net drop from slots to NYS. The distribution is:

- 25 percent to the host county or counties;
- 10 percent to regional counties on a per capita basis;
- Madison County receives an annual payment of $3.5 million and Oneida County receives $2.5 million; and

- The remainder (plus interest) is directed to NYS.

Interactive Fantasy Sports

IFS operators offer fee-based contests in which participants assemble a fantasy roster of players using their skills and knowledge, then compete against other participants. NYS levies a 15 percent tax on IFS gross revenue generated in NYS and an additional tax rate of 0.5 percent (capped at $50,000 per taxpayer annually).

In October 2018, the NYS Supreme Court rendered a split decision that IFS is in violation of the State Constitution as a form of unlawful gambling, but it does not constitute gambling under NYS Penal Law. The State Attorney General appealed the decision in November 2018, which stayed the lower court ruling. The Gaming Commission will continue with the regulation and taxation of IFS during the appeals process. In October 2021, the New York Court of Appeals heard arguments on whether IFS is in violation of the State Constitution as a form of unlawful gambling and ultimately ordered re-argument of the case for a future Court decision.

Administration

Gaming components noted herein are administered by the NYS Gaming Commission.

Lottery

The Gaming Commission develops new lottery games, markets and advertises existing games, distributes games, provides terminals and computer programming for betting, and regulates and performs all other functions necessary to operate an effective NYS lottery.

The Lottery game vendor notifies sales agents of the State's share of sales proceeds by the Monday following the liability week. The sales agent makes necessary deposits and the operations vendor then tenders them to the Gaming Commission.

Video Lottery Gaming

The Gaming Commission collects revenue from VLT licensees daily and holds these funds in its sole custody account. On a weekly basis, revenues collected are transferred to the State Treasury and allocated to the Video Gaming Education Account, Video Gaming Administration Account, and the Video Gaming Prize Pending Account based on statutory requirements.

Commercial Gaming

The Gaming Commission regulates casinos and administers the tax on commercial gaming revenues. Casinos file tax returns and remit payment to the State Treasury on a weekly basis based on statutory rates for slot and table games. Funds from such payments are then allocated to the Commercial Gaming Revenue Fund. The Commission also collected license fees as established by the New York State Resort Gaming Facility Location Board.

Interactive Fantasy Sports

The Gaming Commission administers and regulates IFS entities. 18 IFS entities are registered in NYS, with 13 actively operating and filing tax returns with the Gaming Commission on a monthly basis. Funds underlying each registrant's tax obligation are also remitted monthly to a commission account and are then transferred to the State Treasury to be allocated to the IFS Education Account.

Tribal State Compact

Per the TSC agreements, NYS collects exclusivity payments from the Oneida Nation, Saint Regis Mohawk Tribe, and the Seneca Nation on a quarterly basis. Exclusivity payments are remitted directly by the Tribe or Nation to the State Treasury and allocated to the Tribal State Compact Fund. Each Seneca Nation casino is accounted for separately, while the Oneida Nation casinos are aggregated.

History

GAMING RECEIPTS BY COMPONENT
(millions of dollars)

	Special Revenue Funds							All Funds
	Lottery	VLTs	Casinos			IFS	TSC	
	Education	Education	Education	Localities*	Total	Education	Total	Total
FY 2012	2,147	682	N/A	N/A	N/A	N/A	0	2,829
FY 2013	2,217	857	N/A	N/A	N/A	N/A	0	3,074
FY 2014	2,235	938	N/A	N/A	N/A	N/A	482	3,655
FY 2015	2,191	907	N/A	N/A	N/A	N/A	161	3,258
FY 2016	2,351	961	121	30	151	N/A	233	3,696
FY 2017	2,322	958	31	8	38	3	207	3,528
FY 2018	2,301	958	88	22	110	5	81	3,455
FY 2019	2,533	939	136	34	170	5	90	3,737
FY 2020	2,473	944	151	38	188	6	88	3,699
FY 2021	2,426	382	63	16	79	6	60	2,952

*A portion of commercial gaming casino (20 percent) and Tribal State Compact (various) receipts are directed to localities.

Significant statutory changes within the past decade include:

- In 2014, Suffolk and Nassau OTBs were authorized to have up to 1,000 VLT terminals, and the VLT free play allowance was increased from 10 to 15 percent.

- In 2015, VLTs were authorized to offer certain electronic table games (ETGs).

- In 2016, the operation of IFS was legalized in NYS.

- In 2017, NYRA was reprivatized, and regulations were modified to require horsemen and racetracks to contribute to equine drug testing.

- In 2018, the VLT hold harmless transfer provision was eliminated. Previously, the VLT amount for education could not be lower than $958.2 million and an annual transfer would be made from the commercial gaming education to VLT education to make up the difference if the amount was lower than $958.2 million.

- In 2019, the distribution structure of VLT NMI was simplified by reducing the number of VLG commission rates from over 20 to just 6. Marketing allowance and capital awards were made part of the operators' commission and the operators now have more flexibility in marketing spending.

- In 2019, the Gaming Commission adopted regulations to allow sports wagering at the four commercial casinos. All four casinos are now operating a sports book at their facility.

- In 2020, the Gaming Commission was given permission to approve additional locations within a casino for operation of a sports pool.

- In 2021, mobile sports wagering was authorized. Eight platform providers and nine operators were selected through a competitive bidding process to operate mobile sports wagering in the State. Additionally, a process was established for casinos to petition for a slot tax rate no lower than 30 percent, and the requirement that lottery draw games be offered no more than once daily was amended to no more than twice daily.

Pari-Mutuel Tax

PARI-MUTUEL TAX (millions of dollars)							
	FY 2021	FY 2022	Change		FY 2023	Change	
	Actual	Estimated	Dollar	Percent	Projected	Dollar	Percent
General Fund	9.7	13.0	3.3	34.7	13.0	0.0	0.0
All Funds Total	**9.7**	**13.0**	**3.3**	**34.7**	**13.0**	**0.0**	**0.0**

FY 2022 receipts are estimated to increase from FY 2021 results primarily due to a greater number of race days and overall races compared to the prior year as a result of COVID-19.

FY 2023 receipts are projected to remain flat.

Base and Rate

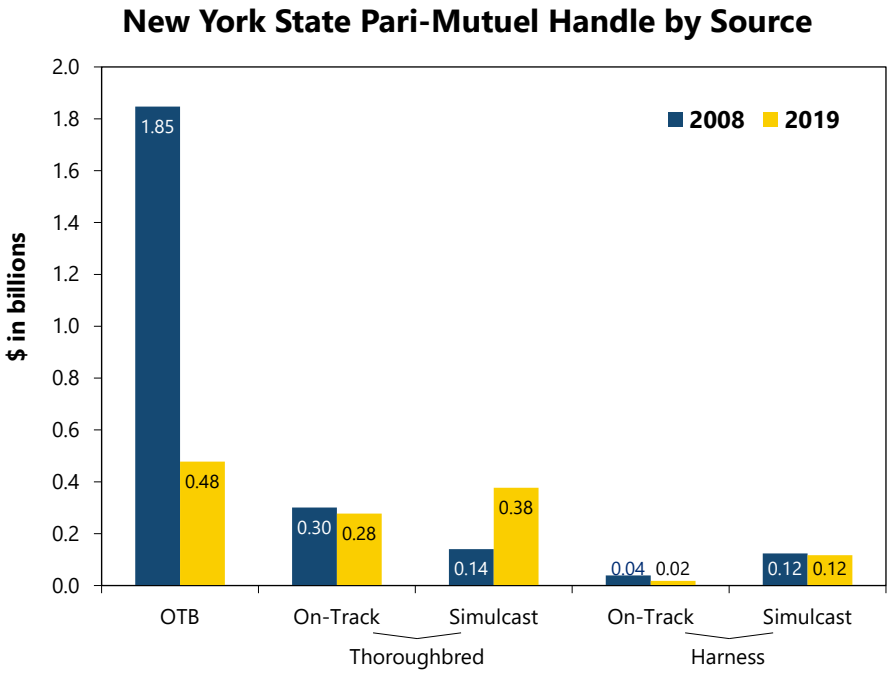
PMT is levied on pari-mutuel wagering activity conducted at horse racetracks and Off-Track Betting (OTB) facilities. This tax includes a portion of commissions withheld from handle (wagering pools) and a remittance of the breakage (the difference between a wager pool for a given bet and the total payout to bettors) and is collected from:

- The four thoroughbred flat track facilities including Finger Lakes, Aqueduct, Belmont, and Saratoga;
- The seven harness tracks located in Batavia, Buffalo, Monticello, Saratoga, Tioga, Vernon, and Yonkers; and
- The OTB facilities located in five NYS regions including the Capital District, Catskill, Nassau, Suffolk and Western.

There are numerous tax rates imposed, which vary depending upon the type of racing, the type of wager (regular, multiple, or exotic), and location at which it is placed.

Liability

Over the course of the past decade, there has been a significant decline ($2.5 billion in 2008 down to $1.3 billion in 2019) and shift in handle, namely a 38 percentage point reduction in OTBs' handle share, a result of the closure of New York City's OTB in December 2010. This decline is partially offset by a 28 percentage point increase in simulcasting's handle share over the same period.



Administration

The Gaming Commission regulates all horse racing and pari-mutuel wagering in NYS. Racetracks and OTBs calculate the PMT owed to NYS from the portion of the commission (the "takeout") withheld from wagering pools and then remit the taxes on a monthly basis to DTF.

History

PARI-MUTUEL TAX RECEIPTS HISTORY (thousands of dollars)					
	General Fund				All Funds
	Flat	Harness	OTB	Total	Total
FY 2012	10,903	589	5,706	17,198	17,198
FY 2013	11,407	593	5,416	17,416	17,416
FY 2014	11,039	538	5,244	16,821	16,821
FY 2015	12,428	482	5,128	18,038	18,038
FY 2016	11,423	466	5,293	17,182	17,182
FY 2017	10,604	426	4,726	15,756	15,756
FY 2018	10,318	378	4,676	15,373	15,373
FY 2019	10,510	353	4,504	15,367	15,367
FY 2020	9,299	332	4,286	13,917	13,917
FY 2021	5,650	19	3,983	9,652	9,652

In 2008, NYS awarded a 25-year license to the NYRA to operate Aqueduct, Belmont, and Saratoga Racetracks.

Real Estate Transfer Tax

REAL ESTATE TRANSFER TAX (millions of dollars)							
	FY 2021	FY 2022	Change		FY 2023	Change	
	Actual	Estimated	Dollar	Percent	Projected	Dollar	Percent
Capital Projects Funds (EPF)	119.1	119.1	0.0	0.0	257.4	138.3	116.1
Debt Service Funds (CWCA)	829.8	1,352.9	523.1	63.0	1,024.7	(328.3)	(24.3)
All Funds Total	**948.9**	**1,472.0**	**523.1**	**55.1**	**1,282.0**	**(190.0)**	**(12.9)**

FY 2022 receipts are estimated to increase substantially from FY 2021 results due to the lower base in FY 2021. COVID-19 had a strong negative impact on the real estate market during the prior year, particularly in NYC during the initial months of the pandemic. Additionally, substantial demand from the outset of the pandemic was deferred until FY 2022, with people who left NYC returning, particularly at the top-end of the market (see Housing Outlook within *the Economic Backdrop* section of this volume for further detail). For these reasons, FY 2021 receipts were under $1 billion, which has not occurred since FY 2014.

FY 2023 receipts are projected to decrease from the current year as the impact of pent-up demand, low mortgage rates, and low inventory which had resulted in elevated price and transaction levels across various regions of the State, especially certain segments of the NYC market, is expected to level off and stabilize.

Base and Rate

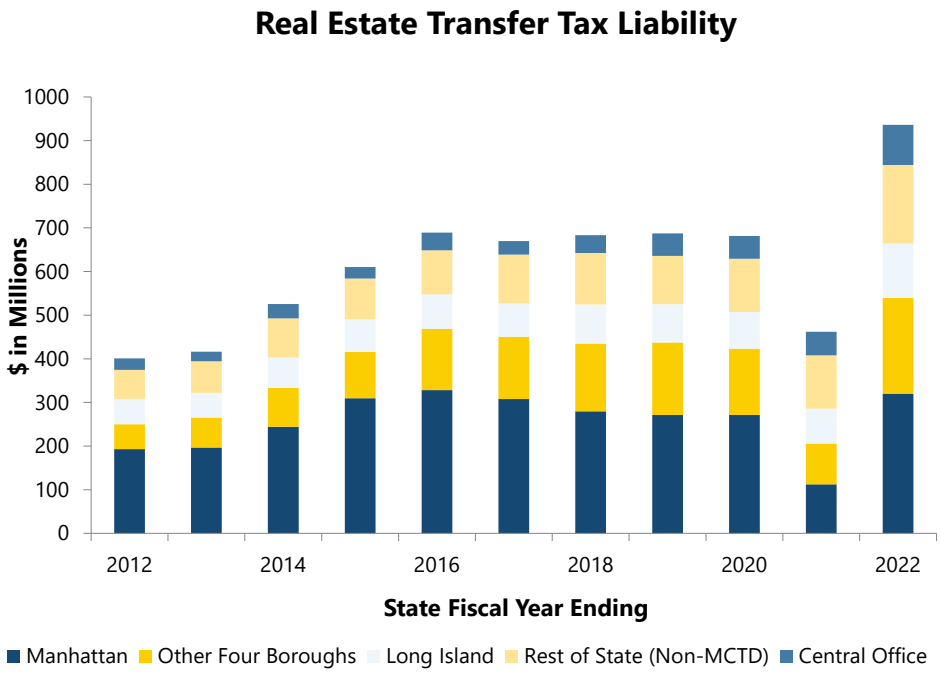
The real estate transfer tax is imposed on each conveyance of real property or interest therein, when the consideration (price) exceeds $500, at a rate of 0.4 percent. An additional one percent tax is imposed on conveyances of residential real property only when the consideration is $1 million and above. The tax rate for conveyances of real property to existing real estate investment trusts (REIT) is 0.2 percent.

Federal and State entities, as well as the United Nations, are exempt from the tax. If an exempt entity is the grantor in a transfer, the tax burden falls upon the grantee. Other significant exemptions from the tax are conveyances pursuant to the Federal Bankruptcy Act and mere change of identity conveyances.

Liability

Real estate transfer tax receipts are a function of the number and type of conveyances and the consideration per conveyance. Conveyances and prices are largely determined by mortgage rates, vacancy rates and inflation. The Manhattan commercial real estate market, which has historically been subject to large swings in demand and capacity, can have a significant impact on receipts. The Manhattan luxury residential market also has an outsized impact on receipts. Overall, NYC tax

liability was 47 percent of total liability in FY 2021, which is much lower than normal due to NYC being the epicenter of the initial COVID-19 outbreak in the U.S.



Administration

Typically, the party conveying the property (grantor) is responsible for payment of the tax to DTF.

For deeded transfers, the tax is paid to a recording agent (generally the county clerk) within 15 days of the transfer. For non-deeded transactions (cooperative housing or stock transfers), payments are made directly to DTF's central office. Counties remit collections to DTF once or twice per month.

- Counties with more than $1.2 million in liability during the previous calendar year remit payments received by the recording agent between the 1st and 15th day of the month to DTF by the 25th day of the same month. Payments received by the recording agent in such counties between the 16th and the final day of the month are due to DTF by the 10th day of the following month;

- All other county recording agents remit collections to DTF by the 10th day of the month following their receipt.

History

REAL ESTATE TRANSFER TAX RECEIPTS HISTORY (millions of dollars)			
	Capital Projects Funds (EPF)	Debt Service Funds (CWCA)	All Funds Total
FY 2012	119	491	610
FY 2013	119	637	756
FY 2014	119	792	911
FY 2015	119	919	1,038
FY 2016	119	1,044	1,163
FY 2017	119	1,007	1,126
FY 2018	119	1,006	1,125
FY 2019	119	1,016	1,135
FY 2020	119	1,005	1,124
FY 2021	119	830	949

Significant statutory changes within the past decade include:

- In 2019, a 0.25 percent real estate transfer tax was imposed on commercial properties $2 million and above and residential properties $3 million and above in NYC. Also, a progressive mansion tax was imposed on residential properties in NYC ranging from 0.25 percent on properties that are $2 million to $3 million, up to 2.9 percent on properties that are $25 million and above.

- In 2021, responsible persons billing language was added and it was clarified that only the seller is responsible for paying the basic RETT and cannot pass through the cost to the buyer.

Comparison with Other States

An important consideration in State tax policy decisions, and by extension in setting Budget priorities, is the relative position of the State in terms of state and local tax rates and tax bases relative to other states.

An emphasis on tax reduction in NYS over the past four decades has resulted in the majority of years with the NYS tax burden, as measured by tax-to-personal income ratio, below the average of the U.S., as well as an improved ranking nationally. However, local taxes in NYS remain very high relative to other states, leaving the State with the highest ranked State and local combined tax burden.

The data presented here suggest there is pressure on states to remain competitive with respect to tax policy. This is evidenced by the gradual clustering over time of states around the national average tax-to-income ratio. However, there is also a strong tendency for a state tax position to be highly persistent over time; this means movements towards the average have been slow. The persistence most likely reflects a combination of localized spending pressures and priorities and different state and regional attitudes towards tax policy.

Several important points on comparative tax structures can be seen by examining the accompanying tables that show the tax-to-personal income ratios for personal income, corporate income, sales and gross receipts60, all other state, and local property taxes.

Total State and Local Taxes

- Overall, state and local tax structures are broadly similar in both the taxes imposed and the rates applied. Average rates measured by the tax-to-income ratios are also roughly equivalent across states, especially when aggregating both state and local taxes.

- The variability across states within each category of tax (e.g., income, sales, or property taxes examined in isolation) is greater than the dispersion for taxes when examined in the aggregate (all state and local taxes added together). For example, a fairly large number of states have excluded the personal income tax from their fiscal policy mix; a smaller subset has excluded corporate taxes, and a few impose no sales tax.

- In general, it appears that the spread of state and local tax burdens across states has been narrowing over time. This may reflect both competitive pressures to keep taxes in line with other states, and the more widespread use of income taxes nationwide.

[60] The sales and gross receipts taxes category includes general sales and gross receipts taxes. Additionally, it includes selective sales and gross receipts taxes on sales of certain commodities, or services, or gross receipts of certain businesses apart from the application of any general sales or gross receipts taxes. Selective sales and gross receipts taxes include the following categories: alcoholic beverages, amusements, insurance, motor fuels, pari-mutuels, public utilities, tobacco products, and other.

- The national average state and local tax-to-income ratio has remained relatively stable over time and significantly below that of New York.

- The state and local tax-to-income ratio for New York exceeded the national average by $4.72 per $100 of personal income, or 41.4 percent in 1977. In 2010, the gap was down to $3.88 , or 36.7 percent, with New York ranking second nationally. In 2019, the gap was further reduced to $3.43 (33.1 percent) above the national average, ranking New York second nationally.

State Taxes

- Prior to the FY 2016 Executive Budget Comparison, New York's tax-to-personal income ratio had been inherently overstated. The numerator included all personal income tax receipts, whether from residents or non-residents. The denominator, as calculated by the U.S. Bureau of Economic Analysis, excluded the personal income of non-N.Y. residents. Beginning with the FY 2016 Executive Budget Comparison, an adjustment was made to add the personal income of non-New York residents that pay New York personal income tax to the denominator.

- New York is a slightly below average tax state when looking only at state taxes as of 2019.

- New York's tax burden, as measured by taxes per $100 of personal income, was $0.39 (6 percent) below the national average of $6.52 in 2019.

- New York taxes per $100 of personal income declined from $6.70 in 2010 to $6.13 in 2019.

- New York's state tax rank was fifteenth highest in 2010 and improved to thirty-first highest in 2019.

Local Taxes

- At least a portion of New York's significant local tax burden is due to the large portion of sales tax retained by New York localities. This contrasts sharply with other states and reflects, at least in part, the need at the local level in New York for receipts to pay for the local share of Medicaid.

- NYC uniquely imposes taxes that comprise a large portion of New York's total local burden. In 2019, $1.77 of New York's local burden of $7.68 per $100 of state personal income was due to NYC personal and corporate income taxes. This accounted for approximately 23 percent of the total local tax burden.

Property Taxes in New York State

- Higher than average property taxes as a share of income (53.3 percent above the 2019 national average) in New York are tied, for the most part, to the rapid escalation in local Medicaid costs and uncapped growth in school property taxes through 2011. The property tax cap went into effect for local fiscal years beginning in 2012 for local governments and school districts (excluding NYC).

- New York's national rank of fifth highest in 2010 improved to sixth highest on 2019, with its local property taxes per $100 of personal income dropping from $4.69 to $4.44.

Table Construction

This section compares the state and local tax structure in NYS with other states. Table 1 reports tax rates for the major tax sources utilized by state and local governments. The first and second data columns of the table show the top personal income tax rate by state, and the income level at which the top rate takes effect; the third column lists top corporate tax rates (most state corporate tax structures have relatively flat rate structures, so the rate reported often applies to all corporate income subject to tax); the fourth column reports state sales tax rates; and the final column reports the average combined state and local sales tax rates imposed by the various jurisdictions within such state. The rates are those in effect as of 2021. The income and corporate tax rates reported exclude local rates. This exclusion is important since New York is one of only a handful of states where significant local personal income and corporate taxes are imposed, as in PIT for NYC.

Tables 2 and 3 report state taxes collected by source divided by state personal income for 2010 and for 2019, respectively, with 2019 being the latest year for which complete state and local tax and personcal income data are available. New York's rank in terms of state taxes fell from fifteenth highest to thirty-first highest over this period.

Tables 4 and 5 report local taxes as a share of state personal income by state in 2010 and in 2019. In 2019, New York had the highest local tax burden using this measure, the same ranking it held in 2010. New York moderately increased from $3.50 above the mean local tax burden in 2010 to $3.86 in 2019. The above-average local tax burden is caused by relatively high property taxes, the large sales tax burden imposed at the local level, and the high ratio in the other category that picks up the income and corporate taxes imposed by NYC.

Tables 6a, 6b and 7 report state and locally imposed taxes as a percentage of state personal income. The data used in the calculations are for fiscal years ending in 2010 and 2019. The tax-to-income ratios included on table 7 are: state and local income taxes, state and local corporate taxes, state and local sales taxes, local property taxes, all other state and local taxes, and finally combined state and local taxes.

Table 8a reports changes in the state tax-to-income ratio over the 1977-2019 period. During this time, New York's state tax burden fell relative to the mean, and has been below the mean for 27 of the 43 recorded years, though 2019 was the first instance since 2008. These results appear to

reflect the impact of the State's temporary high-income Personal Income Tax (PIT) bracket first imposed in 2009. Table 8b reports changes in the state and local tax-to-income ratio over the 1977-2019 period. In 1977, New York's state and local taxes as a percent of personal income were 41.4 percent above the national average. In 2019, New York was 33.1 percent above the national average. The average state and local tax-to-income ratio in 2019 has declined by 8.9 percent compared to 1977, while the New York ratio has declined 14.2 percent over the same period. In every year since 1977, New York has been at least $2.06 in state and local taxes per $100 of personal income above the mean.

The bottom of tables 1-7 report the mean for each tax category, as well as the standard deviation and the Coefficient of Variation (CV). Additionally, the difference between the national average and New York values is reported. While the standard deviation provides a sense of how the data are dispersed around the average value for all states, the CV allows comparisons of spread for data with different averages and is defined simply as the standard deviation divided by the average and is reported as a percentage. It essentially provides a normalized, unit-free measure of dispersion.

The Tax-to-Income Percentage

The tax-to-personal-income percentage offers one simple and commonly used way of comparing states with respect to relative tax burdens. It must be noted that the real effort of tax burden analysis should be to determine who actually faces the economic consequences of a tax, not who is legally required to pay the tax. All simple measures of tax burden across states are inadequate from this perspective. In general, any single indicator of burden will necessarily be limited in value. The following three additional issues should be taken into consideration when relying on this measure:

Tax Exportation

In using taxes per dollar of personal income as a measure of tax burden it must be noted that for many states a significant portion of the tax base is "exported" or paid by out-of-state taxpayers.

For example, in New York, a large number of workers from New Jersey and Connecticut pay tax on New York source income and on taxable sales while in New York. This means that, unless a portion of Connecticut's and New Jersey's personal income is also shifted to NYS, the actual burden on New Jersey residents will appear to be a burden on New York residents. Beginning with the FY 2016 Executive Budget Comparison, a residence adjustment has been made to the personal income calculation for each state. The denominator now includes New York source income earned by non-New York residents. The same adjustment has been made for all 50 states.

One example of tax exportation can be seen in states with a large tourism economy. These states will realize increases in their sales tax collections and other excise taxes that may overstate the tax burden actually paid by their citizens.

Another example is that methods used to apportion corporate taxable income are neither consistent across states, nor are they necessarily representative of actual activity. For example, some states use a three-factor allocation formula that takes into account the percentage of a taxpayer's property, payroll and receipts amounts in the state compared to those amounts everywhere. Other states use different formulas. These differences in allocation formulas could result in either tax importation or exportation, again distorting this measure as a method of comparison of true tax burden imposed on each state's residents.

Overall, it would seem likely that NYS is a net exporter of tax burdens relative to other states. This serves to bias the tax-to-income percentage for New York upward – making burdens in New York appear too high using this measure. The inclusion of the residence adjustment has helped rectify one of the tax exportation issues facing New York.

Income Adjustments

Given two states with identical marginal tax rate structures, differences in the incomes of individuals could yield different tax-to-income percentage results. For example, if NYS and Alabama had identical progressive income brackets built into their respective tax codes, the higher average personal incomes of NYS residents would tend to lead to higher taxes per dollar of personal income due to the nature of the income tax.

Particularly important is the distinction between the National Income and Product Account (NIPA) measure of personal income as defined by the Bureau of Economic Analysis (BEA), and taxable personal income as defined by each state's respective tax code. For example, the NIPA personal income measure does not include capital gains (by the definition of personal income). However, capital gains are a component of New York Adjusted Gross Income (NYAGI) that contributes significantly to personal income tax receipts in NYS. States with high income individuals, like New York, would be more likely to have the tax-to-income percentage distorted upward. In the gains example, the percentage of personal income used in Table 2 will be influenced because the numerator will include taxes on capital gains income that is not included in the denominator, effectively overstating the tax burden relative to other states since New York has a disproportionate share of taxpayers with large capital gains incomes.

Federal Offsets

The Federal tax structure allows for the deductibility of certain state and local taxes. Following the 2017 Federal Tax Reform, taxpayers can deduct only up to $10,000 of their state and local taxes. Residents of states with relatively higher state income, property and corporate tax burdens, such as NYS, receive a larger deduction, thereby offsetting a portion of the individual's total tax burden. Again, this is not reflected in the tax-to-income percentage reported here. So again, it would appear this serves to bias the measure in a way that makes New York look like a relatively higher tax state than is actually the case.

With all three issues, the tax-to-income percentage calculation likely biases the tax burden in New York upward.

Table 1 - Comparison of 2021 State Top Rates					
State	Top PIT Rate	Highest Tax Bracket (Married Filing Joint)	Top Corp. Rate	State Sales Rate	Combined State and Local Sales Tax Rate[1]
Alabama	5	$6,000	6.5	4	9.22
Alaska	-	NA	9.4	-	1.76
Arizona	8	$500,000	4.9	5.6	8.40
Arkansas	5.9	$8,000	6.2	6.5	9.5
California	13.3	$1,198,024	8.84	7.25	8.68
Colorado	4.55	Flat Rate	4.55	2.9	7.7
Connecticut	6.99	$1,000,000	8.25	6.35	6.35
Delaware	6.6	$60,000	8.7	-	-
Florida	-	NA	3.535	6	7.1
Georgia	5.75	$10,000	5.75	4	7
Hawaii	11	$400,000	6.4	4	4.44
Idaho	6.925	$23,520	6.5	6	6.03
Illinois	4.95	Flat Rate	9.5	6.25	8.82
Indiana	3.23	Flat Rate	5.25	7	7
Iowa	8.53	$75,420	10	6	6.9
Kansas	5.7	$60,000	7	6.5	8.69
Kentucky	5	Flat Rate	5	6	6
Louisiana	6	$100,000	8	4.45	9.52
Maine	7.15	$106,350	8.93	5.5	5.5
Maryland	5.75	$300,000	8.25	6	6
Massachusetts	5	Flat Rate	8	6.25	6.25
Michigan	4.25	Flat Rate	6	6	6
Minnesota	9.85	$276,200	9.8	6.875	7.5
Mississippi	5	$10,000	5	7	7.07
Missouri	5.4	$8,584	4	4.225	8.25
Montana	6.9	$18,700	6.75	-	-
Nebraska	6.84	$64,430	7.81	5.5	6.94
Nevada	-	NA	-	6.85	8.23
New Hampshire	5	Flat Rate	7.7	-	-
New Jersey	10.75	$1,000,000	11.5	6.625	6.60
New Mexico	5.9	$315,000	5.9	5.125	7.83
New York	**10.9**	**$25,000,000**	**7.25**	**4**	**8.52**
North Carolina	5.25	Flat Rate	2.5	4.75	7.0
North Dakota	2.9	$440,600	4.31	5	6.96
Ohio	4.797	$221,300	-	5.75	7.23
Oklahoma	5	$12,200	6	4.5	8.95
Oregon	9.9	$250,000	7.6	-	-
Pennsylvania	3.07	Flat Rate	9.99	6	6.34
Rhode Island	5.99	$150,550	7	7	7
South Carolina	7	$15,400	5	6	7.46
South Dakota	-	NA	-	4.5	6.40
Tennessee	-	NA	6.5	7	9.55
Texas	-	NA	-	6.25	8.19
Utah	4.95	Flat Rate	4.95	6.1	7.19
Vermont	8.75	$248,350	8.5	6	6.24
Virginia	5.75	$17,000	6	5.3	5.73
Washington	-	NA	-	6.5	9.23
West Virginia	6.5	$60,000	6.5	6	6.50
Wisconsin	7.65	$355,910	7.9	5	5.43
Wyoming	-	NA	-	4	5.3
Mean Values	**5.48**		**6.32**	**5.11**	**6.52**
Standard Deviation	**3.19**		**2.68**	**1.97**	**2.40**
Coefficient of Variation	**58.13**		**42.34**	**38.63**	**36.79**

"-" indicates either no tax or a tax that is not strictly comparable is imposed.

[1]**Source**: Tax Foundation as of January 1, 2021. Reflects combined state and average local rate for each state.

Table 2 - 2010 Components and Percentage of Total State Tax Burden per $100 Personal Income														
State	Total State Taxes	Rank	PIT	Rank	Percent of Total	Sales and Use	Rank	Percent of Total	Corporate	Rank	Percent of Total	Other	Rank	Percent of Total
Alabama	5.46	34	1.70	34	31.1	2.88	27	52.8	0.28	24	5.1	0.60	29	11.0
Alaska	13.62	1	0.00	44	0.0	0.79	49	5.8	1.94	1	14.2	10.89	1	80.0
Arizona	5.07	40	1.14	40	22.5	3.18	21	62.7	0.20	36	3.9	0.55	32	10.9
Arkansas	8.28	7	2.29	18	27.7	4.06	6	49.0	0.42	7	5.1	1.51	8	18.2
California	6.95	12	2.96	5	42.6	2.65	35	38.2	0.59	3	8.5	0.75	20	10.7
Colorado	4.31	47	2.06	26	47.7	1.76	44	40.9	0.18	39	4.2	0.31	48	7.2
Connecticut	6.06	25	2.83	6	46.7	2.64	36	43.5	0.25	30	4.1	0.34	42	5.7
Delaware	7.28	9	2.25	19	30.9	1.22	48	16.8	0.38	13	5.2	3.44	5	47.2
Florida	4.46	45	0.00	44	0.0	3.69	8	82.8	0.26	28	5.9	0.50	35	11.3
Georgia	4.47	44	2.12	23	47.5	1.97	43	44.1	0.21	34	4.6	0.17	50	3.8
Hawaii	8.74	4	2.76	7	31.6	5.50	1	62.9	0.14	42	1.7	0.34	43	3.8
Idaho	6.15	23	2.23	20	36.2	3.15	22	51.1	0.20	35	3.3	0.57	30	9.3
Illinois	5.25	39	1.78	33	33.9	2.44	38	46.5	0.51	5	9.7	0.52	34	9.9
Indiana	6.36	19	1.78	32	28.0	3.92	7	61.5	0.28	25	4.3	0.39	41	6.1
Iowa	6.08	24	2.37	17	38.9	2.85	28	46.8	0.17	40	2.8	0.70	25	11.5
Kansas	5.90	31	2.44	14	41.4	2.69	33	45.6	0.32	21	5.4	0.45	38	7.6
Kentucky	6.73	14	2.23	21	33.1	3.31	20	49.2	0.27	27	4.0	0.92	16	13.7
Louisiana	5.26	38	1.37	39	26.1	2.91	26	55.3	0.24	31	4.5	0.74	21	14.1
Maine	7.16	11	2.68	10	37.3	3.42	15	47.8	0.36	15	5.0	0.71	24	9.9
Maryland	5.99	27	2.44	15	40.7	2.46	37	41.1	0.35	16	5.8	0.74	22	12.4
Massachusetts	5.97	29	3.01	3	50.4	2.03	42	33.9	0.55	4	9.1	0.39	40	6.5
Michigan	6.57	16	1.64	36	24.9	3.68	10	56.0	0.19	37	2.8	1.07	14	16.3
Minnesota	7.89	8	2.96	4	37.5	3.61	12	45.8	0.33	18	4.2	0.98	15	12.5
Mississippi	7.22	10	1.56	37	21.6	4.69	2	65.0	0.36	14	5.0	0.60	28	8.4
Missouri	4.37	46	1.95	28	44.6	2.04	41	46.7	0.09	45	2.1	0.29	49	6.6
Montana	6.28	21	2.10	24	33.4	1.56	47	24.8	0.27	26	4.4	2.35	6	37.5
Nebraska	5.32	37	2.09	25	39.2	2.69	34	50.5	0.21	33	4.0	0.33	44	6.3
Nevada	5.98	28	0.00	44	0.0	4.38	4	73.3	0.00	47	0.0	1.60	7	26.7
New Hampshire	4.12	50	0.15	42	3.6	1.63	46	39.6	0.91	2	22.0	1.43	9	34.8
New Jersey	6.40	18	2.55	13	39.8	2.79	29	43.6	0.51	6	7.9	0.56	31	8.7
New Mexico	6.41	17	1.43	38	22.3	3.44	14	53.7	0.19	38	2.9	1.36	10	21.2
New York	**6.70**	**15**	**3.65**	**1**	**54.5**	**2.22**	**40**	**33.1**	**0.41**	**10**	**6.1**	**0.43**	**39**	**6.4**
North Carolina	6.32	20	2.68	9	42.5	2.77	31	43.8	0.38	12	6.0	0.49	37	7.7
North Dakota	9.61	3	1.10	41	11.5	3.44	13	35.9	0.32	20	3.3	4.74	3	49.3
Ohio	5.70	33	1.90	29	33.4	2.96	25	51.9	0.03	46	0.6	0.80	19	14.0
Oklahoma	5.33	36	1.67	35	31.4	2.24	39	42.0	0.16	41	3.1	1.25	11	23.5
Oregon	5.42	35	3.58	2	66.2	0.72	50	13.4	0.26	29	4.7	0.85	18	15.7
Pennsylvania	5.96	30	1.85	31	31.0	3.06	24	51.3	0.33	19	5.5	0.73	23	12.3
Rhode Island	6.18	22	2.19	22	35.4	3.38	18	54.7	0.29	22	4.7	0.32	46	5.2
South Carolina	5.02	41	1.85	30	36.9	2.75	32	54.8	0.10	43	2.1	0.31	47	6.2
South Dakota	4.13	49	0.00	44	0.0	3.38	17	81.8	0.10	44	2.4	0.65	26	15.8
Tennessee	4.82	43	0.08	43	1.6	3.68	9	76.4	0.41	9	8.6	0.65	27	13.4
Texas	4.27	48	0.00	44	0.0	3.37	19	79.0	0.00	47	0.0	0.90	17	21.0
Utah	6.04	26	2.43	16	40.2	2.78	30	46.0	0.28	23	4.7	0.55	33	9.1
Vermont	10.06	2	1.96	27	19.5	3.39	16	33.7	0.34	17	3.4	4.37	4	43.5
Virginia	4.88	42	2.57	12	52.8	1.75	45	35.8	0.23	32	4.8	0.32	45	6.6
Washington	5.88	32	0.00	44	0.0	4.69	3	79.8	0.00	47	0.0	1.19	13	20.2
West Virginia	8.39	6	2.66	11	31.7	4.09	5	48.7	0.41	8	4.9	1.23	12	14.6
Wisconsin	6.74	13	2.72	8	40.3	3.14	23	46.5	0.40	11	5.9	0.49	36	7.2
Wyoming	8.58	5	0.00	44	0.0	3.64	11	42.4	0.00	47	0.0	4.94	2	57.6
Mean	**6.32**		**1.84**		**29.8**	**2.95**		**48.6**	**0.31**		**4.9**	**1.23**		**16.8**
Standard Deviation	**1.71**		**1.00**			**0.96**			**0.29**			**1.75**		
Coefficient of Variation	**27.06**		**54.27**			**32.56**			**91.29**			**142.92**		
NYS Diff. from Mean	**0.38**		**1.82**		**24.7**	**(0.73)**		**(15.5)**	**0.10**		**1.3**	**(0.80)**		**(10.4)**

Source: Moody's Economy.com, U.S. Census Bureau

Table 3 - 2019 Components and Percentage of Total State Tax Burden per $100 Personal Income														
State	Total State Taxes	Rank	PIT	Rank	Percent of Total	Sales and Use	Rank	Percent of Total	Corporate	Rank	Percent of Total	Other	Rank	Percent of Total
Alabama	5.66	37	2.05	33	36.2	2.75	31	48.6	0.33	25	5.9	0.53	29	9.3
Alaska	4.02	49	0.00	44	0.0	0.63	50	15.7	0.75	3	18.7	2.64	5	65.7
Arizona	5.78	36	1.71	39	29.5	3.33	19	57.5	0.16	43	2.8	0.59	26	10.2
Arkansas	7.79	8	2.30	28	29.5	3.75	9	48.2	0.41	17	5.2	1.33	9	17.1
California	7.73	9	4.11	2	53.2	2.47	38	32.0	0.57	6	7.3	0.58	27	7.5
Colorado	4.80	44	2.47	25	51.5	1.81	45	37.7	0.24	37	5.0	0.28	47	5.8
Connecticut	7.73	10	3.41	6	44.1	3.15	22	40.7	0.83	2	10.8	0.34	43	4.4
Delaware	8.53	6	3.23	9	37.9	1.12	48	13.1	0.54	7	6.3	3.64	3	42.7
Florida	4.13	48	0.00	44	0.0	3.37	16	81.5	0.29	30	7.0	0.48	34	11.6
Georgia	5.00	43	2.46	26	49.3	1.92	43	38.5	0.26	33	5.1	0.36	42	7.1
Hawaii	10.77	2	3.37	8	31.3	6.64	1	61.7	0.25	34	2.3	0.51	33	4.7
Idaho	6.47	23	2.22	30	34.3	3.35	17	51.7	0.38	20	5.9	0.53	30	8.1
Illinois	6.21	29	2.57	21	41.3	2.67	35	43.0	0.52	10	8.4	0.46	36	7.3
Indiana	7.40	12	2.85	14	38.5	4.06	6	54.8	0.24	35	3.3	0.25	48	3.4
Iowa	6.84	16	2.65	19	38.7	3.14	23	45.9	0.35	24	5.1	0.71	18	10.3
Kansas	6.81	17	2.56	22	37.7	3.07	25	45.1	0.33	26	4.8	0.84	16	12.4
Kentucky	6.86	15	2.43	27	35.4	3.31	21	48.2	0.40	18	5.8	0.72	17	10.5
Louisiana	5.44	39	1.77	38	32.6	2.96	27	54.5	0.23	39	4.2	0.47	35	8.7
Maine	7.30	13	2.67	18	36.6	3.63	10	49.8	0.39	19	5.4	0.60	25	8.2
Maryland	6.79	18	2.90	13	42.6	2.85	30	41.9	0.37	21	5.5	0.67	20	9.9
Massachusetts	6.41	25	3.46	4	53.9	1.93	42	30.1	0.59	5	9.3	0.43	38	6.8
Michigan	6.39	26	2.14	32	33.5	3.03	26	47.4	0.24	36	3.8	0.98	14	15.3
Minnesota	8.78	4	3.86	3	44.0	3.48	14	39.6	0.53	8	6.1	0.90	15	10.3
Mississippi	7.58	11	1.80	37	23.7	4.79	3	63.1	0.45	13	6.0	0.54	28	7.1
Missouri	4.46	45	2.23	29	50.0	1.88	44	42.1	0.12	44	2.8	0.23	49	5.1
Montana	6.26	27	2.79	16	44.6	1.31	47	20.9	0.37	22	5.8	1.79	7	28.6
Nebraska	5.62	38	2.49	24	44.2	2.52	37	44.8	0.41	16	7.4	0.20	50	3.6
Nevada	6.50	21	0.00	44	0.0	5.22	2	80.4	0.00	47	0.0	1.27	11	19.6
New Hampshire	3.90	50	0.16	42	4.1	1.33	46	34.1	1.08	1	27.8	1.33	10	34.0
New Jersey	7.10	14	2.93	12	41.4	2.92	28	41.2	0.72	4	10.2	0.52	31	7.3
New Mexico	8.58	5	1.84	36	21.4	4.26	5	49.6	0.23	38	2.7	2.25	6	26.3
New York	**6.13**	**31**	**3.45**	**5**	**56.3**	**1.95**	**41**	**31.9**	**0.31**	**29**	**5.0**	**0.41**	**39**	**6.7**
North Carolina	6.15	30	2.78	17	45.2	2.68	34	43.7	0.18	41	2.9	0.51	32	8.3
North Dakota	11.02	1	0.92	41	8.4	3.47	15	31.5	0.32	27	2.9	6.31	1	57.2
Ohio	5.37	40	1.63	40	30.3	3.34	18	62.3	0.00	46	0.0	0.39	40	7.3
Oklahoma	5.94	34	1.96	34	33.0	2.55	36	42.9	0.17	42	2.8	1.27	12	21.3
Oregon	6.47	22	4.55	1	70.3	0.86	49	13.4	0.42	14	6.5	0.64	22	9.8
Pennsylvania	6.11	32	1.92	35	31.3	3.14	24	51.3	0.42	15	6.9	0.64	21	10.5
Rhode Island	6.44	24	2.49	23	38.7	3.31	20	51.4	0.32	28	5.0	0.32	45	5.0
South Carolina	5.14	41	2.18	31	42.4	2.40	39	46.7	0.18	40	3.5	0.38	41	7.3
South Dakota	4.20	47	0.00	44	0.0	3.50	13	83.2	0.10	45	2.4	0.61	24	14.4
Tennessee	5.11	42	0.06	43	1.2	3.84	7	75.1	0.53	9	10.3	0.68	19	13.4
Texas	4.26	46	0.00	44	0.0	3.63	11	85.1	0.00	47	0.0	0.63	23	14.9
Utah	6.78	20	3.40	7	50.2	2.74	32	40.4	0.36	23	5.3	0.28	46	4.1
Vermont	10.51	3	2.61	20	24.8	3.53	12	33.6	0.45	12	4.3	3.92	2	37.3
Virginia	5.83	35	3.21	10	55.1	2.03	40	34.8	0.27	32	4.6	0.32	44	5.5
Washington	6.23	28	0.00	44	0.0	4.75	4	76.4	0.00	47	0.0	1.47	8	23.6
West Virginia	7.91	7	2.85	15	36.0	3.79	8	48.0	0.27	31	3.4	0.99	13	12.6
Wisconsin	6.78	19	2.98	11	44.0	2.89	29	42.6	0.46	11	6.7	0.45	37	6.7
Wyoming	6.04	33	0.00	44	0.0	2.73	33	45.2	0.00	47	0.0	3.31	4	54.8
Mean	**6.52**		**2.17**		**32.6**	**3.00**		**46.9**	**0.35**		**5.6**	**1.01**		**15.0**
Standard Deviation	**1.59**		**1.19**			**1.09**			**0.22**			**1.14**		
Coefficient of Variation	**24.39**		**55.06**			**36.41**			**62.02**			**112.46**		
NYS Diff. from Mean	**(0.39)**		**1.28**		**23.8**	**(1.04)**		**(15.0)**	**(0.04)**		**(0.6)**	**(0.60)**		**(8.3)**

Source: Moody's Economy.com, U.S. Census Bureau

Table 4 - 2010 Components and Percentage of Total Local Taxes Per $100 of Personal Income											
State	Total	Rank	Property	Rank	Percent of Total	Sales	Rank	Percent of Total	Other	Rank	Percent of Total
Alabama	3.34	41	1.46	49	43.8	1.39	6	41.6	0.49	8	14.6
Alaska	4.83	14	3.48	19	72.1	1.24	9	25.7	0.10	30	2.1
Arizona	4.44	22	3.03	31	68.2	1.24	10	27.9	0.17	23	3.8
Arkansas	2.12	49	0.89	50	42.1	1.19	12	56.3	0.03	49	1.6
California	4.40	26	3.27	24	74.3	0.88	17	19.9	0.25	19	5.8
Colorado	5.48	3	3.46	20	63.0	1.76	2	32.2	0.26	17	4.8
Connecticut	4.57	18	4.51	7	98.7	0.00	49	0.0	0.06	46	1.3
Delaware	2.25	48	1.86	45	82.6	0.03	46	1.2	0.36	14	16.1
Florida	5.03	10	4.11	11	81.8	0.70	23	14.0	0.21	20	4.2
Georgia	4.66	16	3.17	28	68.0	1.38	7	29.7	0.11	29	2.3
Hawaii	3.47	37	2.52	40	72.6	0.64	26	18.6	0.31	16	8.8
Idaho	2.99	47	2.82	35	94.5	0.05	44	1.7	0.11	27	3.8
Illinois	5.36	6	4.46	8	83.2	0.77	21	14.4	0.13	26	2.4
Indiana	4.41	25	3.53	17	80.0	0.07	40	1.6	0.81	6	18.4
Iowa	4.65	17	3.78	14	81.2	0.73	22	15.7	0.15	25	3.1
Kansas	4.46	21	3.49	18	78.3	0.88	16	19.8	0.09	33	2.0
Kentucky	3.03	46	1.75	47	57.8	0.39	31	13.0	0.88	5	29.2
Louisiana	4.50	20	2.03	43	45.2	2.36	1	52.4	0.11	28	2.4
Maine	4.79	15	4.75	4	99.1	0.01	48	0.3	0.03	50	0.6
Maryland	5.04	9	3.04	30	60.3	0.23	33	4.5	1.77	1	35.2
Massachusetts	3.95	32	3.83	13	96.9	0.06	42	1.4	0.06	45	1.6
Michigan	3.86	34	3.61	16	93.4	0.08	39	2.0	0.18	22	4.6
Minnesota	3.40	39	3.19	26	94.0	0.13	37	3.7	0.08	39	2.3
Mississippi	3.07	45	2.85	33	92.9	0.12	38	4.0	0.10	32	3.1
Missouri	4.15	29	2.53	38	61.0	1.20	11	28.9	0.42	10	10.1
Montana	3.47	38	3.37	22	97.2	0.02	47	0.6	0.07	41	2.2
Nebraska	4.99	11	3.94	12	79.1	0.51	27	10.3	0.53	7	10.6
Nevada	4.44	24	3.23	25	72.8	0.87	18	19.7	0.33	15	7.5
New Hampshire	5.31	7	5.22	3	98.4	0.00	49	0.0	0.08	36	1.6
New Jersey	6.21	2	6.10	1	98.3	0.03	45	0.5	0.07	42	1.2
New Mexico	3.48	36	1.91	44	54.9	1.50	3	43.2	0.07	43	1.9
New York	**7.72**	**1**	**4.69**	**5**	**60.7**	**1.46**	**5**	**18.8**	**1.58**	**2**	**20.4**
North Carolina	3.35	40	2.59	37	77.1	0.68	25	20.4	0.08	35	2.5
North Dakota	3.29	43	2.76	36	83.8	0.47	28	14.2	0.06	44	2.0
Ohio	4.84	13	3.16	29	65.3	0.46	29	9.5	1.22	3	25.2
Oklahoma	3.33	42	1.79	46	53.7	1.50	4	45.0	0.04	48	1.3
Oregon	4.35	27	3.68	15	84.7	0.26	32	6.0	0.41	11	9.3
Pennsylvania	4.50	19	3.17	27	70.5	0.21	34	4.8	1.11	4	24.7
Rhode Island	5.43	4	5.30	2	97.6	0.05	43	1.0	0.08	38	1.5
South Carolina	4.16	28	3.34	23	80.1	0.40	30	9.7	0.42	9	10.1
South Dakota	3.94	33	2.89	32	73.3	0.97	15	24.6	0.08	37	2.1
Tennessee	3.57	35	2.33	42	65.2	1.08	13	30.2	0.16	24	4.5
Texas	5.17	8	4.29	10	83.0	0.79	20	15.4	0.08	34	1.6
Utah	3.95	31	2.83	34	71.8	1.02	14	25.7	0.10	31	2.5
Vermont	1.77	50	1.65	48	93.1	0.07	41	4.0	0.05	47	2.9
Virginia	4.44	23	3.38	21	76.0	0.70	24	15.7	0.37	12	8.4
Washington	4.00	30	2.49	41	62.3	1.25	8	31.2	0.26	18	6.5
West Virginia	3.09	44	2.52	39	81.6	0.20	35	6.5	0.37	13	11.9
Wisconsin	4.90	12	4.64	6	94.7	0.19	36	3.8	0.08	40	1.5
Wyoming	5.41	5	4.38	9	81.0	0.84	19	15.5	0.19	21	3.5
Mean	**4.23**		**3.26**		**76.8**	**0.66**		**16.1**	**0.30**		**7.0**
Standard Deviation	**1.05**		**1.06**			**0.56**			**0.38**		
CV	**24.75**		**32.36**			**85.03**			**126.61**		
NYS Diff. from Mean	**3.50**		**1.43**		**(16.1)**	**0.79**		**2.7**	**1.27**		**13.4**

Source: Moody's Economy.com, U.S. Census Bureau
Note: "Other" includes NYC imposed taxes and other categories.

Table 5 - 2019 Components and Percentage of Total Local Taxes Per $100 of Personal Income											
State	Total	Rank	Property	Rank	Percent of Total	Sales	Rank	Percent of Total	Other	Rank	Percent of Total
Alabama	3.15	38	1.28	48	40.6	1.49	5	47.1	0.39	11	12.3
Alaska	4.43	13	3.39	12	76.7	0.95	15	21.4	0.09	39	2.0
Arizona	3.72	30	2.32	36	62.4	1.25	9	33.8	0.14	24	3.8
Arkansas	2.06	49	0.89	49	43.2	1.13	13	55.0	0.04	48	1.8
California	4.16	17	2.87	23	68.9	0.95	14	22.8	0.35	15	8.3
Colorado	4.98	7	3.16	16	63.5	1.63	2	32.7	0.19	21	3.8
Connecticut	4.70	11	4.63	5	98.6	0.00	49	0.0	0.07	46	1.4
Delaware	2.15	48	1.75	46	81.3	0.03	45	1.5	0.37	12	17.2
Florida	3.77	29	2.88	22	76.5	0.66	24	17.4	0.23	19	6.1
Georgia	3.86	24	2.59	32	67.3	1.14	12	29.4	0.13	27	3.3
Hawaii	3.81	25	2.70	28	70.9	0.75	22	19.6	0.36	14	9.5
Idaho	2.81	45	2.61	31	93.1	0.09	39	3.3	0.10	32	3.6
Illinois	5.07	5	4.04	8	79.8	0.90	18	17.7	0.13	26	2.6
Indiana	2.97	43	2.47	34	82.9	0.08	41	2.5	0.43	8	14.5
Iowa	4.16	18	3.62	10	87.0	0.40	29	9.7	0.14	25	3.3
Kansas	3.81	26	2.77	26	72.8	0.94	16	24.8	0.09	37	2.4
Kentucky	3.08	40	1.70	47	55.3	0.41	28	13.2	0.97	5	31.5
Louisiana	4.25	15	1.96	42	46.0	2.21	1	51.9	0.09	36	2.1
Maine	5.82	3	5.75	2	98.9	0.01	47	0.2	0.05	47	0.9
Maryland	5.01	6	2.70	29	53.8	0.29	32	5.7	2.03	1	40.5
Massachusetts	3.79	28	3.60	11	94.9	0.10	38	2.5	0.10	35	2.5
Michigan	3.02	42	2.75	27	91.1	0.06	43	1.9	0.21	20	7.0
Minnesota	3.06	41	2.78	25	91.0	0.17	36	5.5	0.11	31	3.5
Mississippi	3.18	36	2.98	18	93.9	0.11	37	3.5	0.08	40	2.7
Missouri	4.01	22	2.31	37	57.6	1.30	8	32.3	0.40	10	10.1
Montana	3.13	39	3.01	17	96.3	0.03	44	1.1	0.08	42	2.6
Nebraska	4.89	10	3.80	9	77.8	0.48	26	9.9	0.60	6	12.4
Nevada	3.46	33	1.91	43	55.3	1.25	10	36.0	0.30	18	8.7
New Hampshire	5.33	4	5.22	3	97.9	0.01	48	0.2	0.10	34	1.9
New Jersey	5.86	2	5.76	1	98.2	0.03	46	0.5	0.07	44	1.3
New Mexico	3.71	31	2.04	41	55.0	1.60	3	43.1	0.07	45	1.9
New York	**7.68**	**1**	**4.44**	**6**	57.8	**1.47**	**6**	19.1	**1.77**	**2**	**23.1**
North Carolina	3.22	35	2.30	38	71.6	0.80	19	24.9	0.11	29	3.5
North Dakota	0.00	50	0.00	50	.	0.00	49	.	0.00	50	.
Ohio	4.50	12	2.86	24	63.5	0.46	27	10.3	1.18	3	26.3
Oklahoma	3.27	34	1.79	44	54.9	1.39	7	42.4	0.09	38	2.7
Oregon	4.04	19	3.24	15	80.2	0.30	31	7.4	0.50	7	12.4
Pennsylvania	4.31	14	2.95	20	68.5	0.22	33	5.1	1.13	4	26.3
Rhode Island	4.97	8	4.84	4	97.2	0.06	42	1.2	0.08	41	1.6
South Carolina	4.03	20	2.98	19	73.9	0.64	25	15.9	0.41	9	10.2
South Dakota	4.02	21	2.94	21	73.1	0.93	17	23.2	0.15	23	3.7
Tennessee	2.66	46	1.77	45	66.6	0.78	20	29.2	0.11	30	4.1
Texas	4.93	9	4.10	7	83.1	0.75	21	15.3	0.08	43	1.6
Utah	3.79	27	2.53	33	66.6	1.15	11	30.3	0.12	28	3.1
Vermont	2.30	47	2.19	39	95.0	0.08	40	3.6	0.03	49	1.4
Virginia	4.24	16	3.25	14	76.7	0.66	23	15.7	0.32	16	7.6
Washington	4.00	23	2.14	40	53.4	1.55	4	38.6	0.32	17	8.0
West Virginia	2.90	44	2.34	35	80.5	0.20	35	6.9	0.36	13	12.5
Wisconsin	3.61	32	3.31	13	91.6	0.20	34	5.6	0.10	33	2.8
Wyoming	3.18	37	2.63	30	82.9	0.36	30	11.3	0.18	22	5.8
Mean	**3.86**		**2.90**		**74.8**	**0.65**		**17.4**	**0.31**		**7.8**
Std. Dev.	**1.16**		**1.12**			**0.56**			**0.41**		
CV	**30.04**		**38.50**			**86.50**			**133.02**		
NYS Diff.	**3.83**		**1.54**		**(17.0)**	**0.82**		**1.7**	**1.46**		**15.3**

Source: Moody's Economy.com, U.S. Census Bureau
Note: "Other" includes NYC imposed taxes and all other categories.

Table 6a - State/Local Split of 2010 Tax-to-Income Ratio				
State	State Taxes	Local Taxes	State/Local	Total Rank
Alabama	5.46	3.34	8.80	46
Alaska	13.62	4.83	18.45	1
Arizona	5.07	4.44	9.51	38
Arkansas	8.28	2.12	10.40	23
California	6.95	4.40	11.35	12
Colorado	4.31	5.48	9.80	31
Connecticut	6.06	4.57	10.63	17
Delaware	7.28	2.25	9.53	37
Florida	4.46	5.03	9.48	39
Georgia	4.47	4.66	9.13	45
Hawaii	8.74	3.47	12.21	6
Idaho	6.15	2.99	9.14	44
Illinois	5.25	5.36	10.61	18
Indiana	6.36	4.41	10.77	15
Iowa	6.08	4.65	10.74	16
Kansas	5.90	4.46	10.37	24
Kentucky	6.73	3.03	9.75	34
Louisiana	5.26	4.50	9.76	33
Maine	7.16	4.79	11.96	7
Maryland	5.99	5.04	11.03	14
Massachusetts	5.97	3.95	9.92	28
Michigan	6.57	3.86	10.43	21
Minnesota	7.89	3.40	11.29	13
Mississippi	7.22	3.07	10.28	26
Missouri	4.37	4.15	8.53	48
Montana	6.28	3.47	9.75	35
Nebraska	5.32	4.99	10.31	25
Nevada	5.98	4.44	10.42	22
New Hampshire	4.12	5.31	9.42	41
New Jersey	6.40	6.21	12.60	5
New Mexico	6.41	3.48	9.89	29
New York	**6.70**	**7.72**	**14.43**	**2**
North Carolina	6.32	3.35	9.67	36
North Dakota	9.61	3.29	12.90	4
Ohio	5.70	4.84	10.54	19
Oklahoma	5.33	3.33	8.66	47
Oregon	5.42	4.35	9.77	32
Pennsylvania	5.96	4.50	10.46	20
Rhode Island	6.18	5.43	11.61	10
South Carolina	5.02	4.16	9.18	43
South Dakota	4.13	3.94	8.07	50
Tennessee	4.82	3.57	8.39	49
Texas	4.27	5.17	9.44	40
Utah	6.04	3.95	9.98	27
Vermont	10.06	1.77	11.83	8
Virginia	4.88	4.44	9.32	42
Washington	5.88	4.00	9.88	30
West Virginia	8.39	3.09	11.47	11
Wisconsin	6.74	4.90	11.64	9
Wyoming	8.58	5.41	13.99	3
Mean Values	**6.32**	**4.23**	**10.55**	
Standard Deviation	**1.71**	**1.05**	**1.73**	
Coefficient of Variation	**27.06**	**24.75**	**16.44**	
NYS Diff. from Avg.	**0.38**	**3.50**	**3.88**	

Source: Moody's Economy.com, U.S. Census Bureau

Table 6b - State/Local Split of 2019 Tax-to-Income Ratio				
State	State Taxes	Local Taxes	State/Local	Total Rank
Alabama	5.66	3.15	8.82	45
Alaska	4.02	4.43	8.45	47
Arizona	5.78	3.72	9.50	34
Arkansas	7.79	2.06	9.85	31
California	7.73	4.16	11.89	8
Colorado	4.80	4.98	9.78	32
Connecticut	7.73	4.70	12.43	6
Delaware	8.53	2.15	10.68	17
Florida	4.13	3.77	7.90	49
Georgia	5.00	3.86	8.85	44
Hawaii	10.77	3.81	14.59	1
Idaho	6.47	2.81	9.28	38
Illinois	6.21	5.07	11.28	12
Indiana	7.40	2.97	10.38	24
Iowa	6.84	4.16	11.00	14
Kansas	6.81	3.81	10.61	18
Kentucky	6.86	3.08	9.94	29
Louisiana	5.44	4.25	9.69	33
Maine	7.30	5.82	13.11	3
Maryland	6.79	5.01	11.81	10
Massachusetts	6.41	3.79	10.20	26
Michigan	6.39	3.02	9.40	35
Minnesota	8.78	3.06	11.83	9
Mississippi	7.58	3.18	10.76	16
Missouri	4.46	4.01	8.48	46
Montana	6.26	3.13	9.39	36
Nebraska	5.62	4.89	10.52	20
Nevada	6.50	3.46	9.96	28
New Hampshire	3.90	5.33	9.23	39
New Jersey	7.10	5.86	12.96	4
New Mexico	8.58	3.71	12.29	7
New York	**6.13**	**7.68**	**13.81**	**2**
North Carolina	6.15	3.22	9.36	37
North Dakota	11.02	0.00	11.02	13
Ohio	5.37	4.50	9.87	30
Oklahoma	5.94	3.27	9.21	41
Oregon	6.47	4.04	10.51	21
Pennsylvania	6.11	4.31	10.43	22
Rhode Island	6.44	4.97	11.41	11
South Carolina	5.14	4.03	9.17	43
South Dakota	4.20	4.02	8.22	48
Tennessee	5.11	2.66	7.77	50
Texas	4.26	4.93	9.19	42
Utah	6.78	3.79	10.57	19
Vermont	10.51	2.30	12.81	5
Virginia	5.83	4.24	10.07	27
Washington	6.23	4.00	10.23	25
West Virginia	7.91	2.90	10.81	15
Wisconsin	6.78	3.61	10.39	23
Wyoming	6.04	3.18	9.22	40
Mean Values	**6.52**	**3.86**	**10.38**	
Standard Deviation	**1.59**	**1.16**	**1.49**	
Coefficient of Variation	**24.39**	**30.04**	**14.33**	
NYS Diff. from Avg.	**(0.39)**	**3.83**	**3.43**	

Source: Moody's Economy.com, U.S. Census Bureau

Table 7 - 2019 Ratios of Tax Collections to Personal Income by Category									
State	State PIT	Local PIT	State Corporate	Local Corporate	State Sales	Local Sales	Local Property	All Other	Total State/Local
Alabama	2.05	0.06	0.33	0.00	2.75	1.49	1.28	0.85	8.82
Alaska	0.00	0.00	0.75	0.00	0.63	0.95	3.39	2.73	8.45
Arizona	1.71	0.00	0.16	0.00	3.33	1.25	2.32	0.73	9.50
Arkansas	2.30	0.00	0.41	0.00	3.75	1.13	0.89	1.37	9.85
California	4.11	0.00	0.57	0.00	2.47	0.95	2.87	0.93	11.89
Colorado	2.47	0.00	0.24	0.00	1.81	1.63	3.16	0.46	9.78
Connecticut	3.41	0.00	0.83	0.00	3.15	0.00	4.63	0.40	12.43
Delaware	3.23	0.00	0.54	0.01	1.12	0.03	1.75	4.00	10.68
Florida	0.00	0.00	0.29	0.00	3.37	0.66	2.88	0.71	7.90
Georgia	2.46	0.00	0.26	0.00	1.92	1.14	2.59	0.48	8.85
Hawaii	3.37	0.00	0.25	0.00	6.64	0.75	2.70	0.87	14.59
Idaho	2.22	0.00	0.38	0.00	3.35	0.09	2.61	0.63	9.28
Illinois	2.57	0.00	0.52	0.00	2.67	0.90	4.04	0.59	11.28
Indiana	2.85	0.34	0.24	0.00	4.06	0.08	2.47	0.34	10.38
Iowa	2.65	0.07	0.35	0.00	3.14	0.40	3.62	0.77	11.00
Kansas	2.56	0.00	0.33	0.00	3.07	0.94	2.77	0.93	10.61
Kentucky	2.43	0.82	0.40	0.10	3.31	0.41	1.70	0.78	9.94
Louisiana	1.77	0.00	0.23	0.00	2.96	2.21	1.96	0.56	9.69
Maine	2.67	0.00	0.39	0.00	3.63	0.01	5.75	0.65	13.11
Maryland	2.90	1.68	0.37	0.00	2.85	0.29	2.70	1.02	11.81
Massachusetts	3.46	0.00	0.59	0.00	1.93	0.10	3.60	0.53	10.20
Michigan	2.14	0.13	0.24	0.00	3.03	0.06	2.75	1.06	9.40
Minnesota	3.86	0.00	0.53	0.00	3.48	0.17	2.78	1.01	11.83
Mississippi	1.80	0.00	0.45	0.00	4.79	0.11	2.98	0.63	10.76
Missouri	2.23	0.15	0.12	0.03	1.88	1.30	2.31	0.45	8.48
Montana	2.79	0.00	0.37	0.00	1.31	0.03	3.01	1.87	9.39
Nebraska	2.49	0.00	0.41	0.00	2.52	0.48	3.80	0.81	10.52
Nevada	0.00	0.00	0.00	0.00	5.22	1.25	1.91	1.57	9.96
New Hampshire	0.16	0.00	1.08	0.00	1.33	0.01	5.22	1.43	9.23
New Jersey	2.93	0.00	0.72	0.00	2.92	0.03	5.76	0.59	12.96
New Mexico	1.84	0.00	0.23	0.00	4.26	1.60	2.04	2.32	12.29
New York	**3.45**	**1.01**	**0.31**	**0.45**	**1.95**	**1.47**	**4.44**	**0.73**	**13.81**
North Carolina	2.78	0.00	0.18	0.00	2.68	0.80	2.30	0.62	9.36
North Dakota	0.92	0.00	0.32	0.00	3.47	0.00	0.00	6.31	11.02
Ohio	1.63	1.04	0.00	0.05	3.34	0.46	2.86	0.49	9.87
Oklahoma	1.96	0.00	0.17	0.00	2.55	1.39	1.79	1.35	9.21
Oregon	4.55	0.00	0.42	0.05	0.86	0.30	3.24	1.09	10.51
Pennsylvania	1.92	0.79	0.42	0.08	3.14	0.22	2.95	0.91	10.43
Rhode Island	2.49	0.00	0.32	0.00	3.31	0.06	4.84	0.40	11.41
South Carolina	2.18	0.00	0.18	0.00	2.40	0.64	2.98	0.79	9.17
South Dakota	0.00	0.00	0.10	0.00	3.50	0.93	2.94	0.75	8.22
Tennessee	0.06	0.00	0.53	0.00	3.84	0.78	1.77	0.79	7.77
Texas	0.00	0.00	0.00	0.00	3.63	0.75	4.10	0.71	9.19
Utah	3.40	0.00	0.36	0.00	2.74	1.15	2.53	0.40	10.57
Vermont	2.61	0.00	0.45	0.00	3.53	0.08	2.19	3.95	12.81
Virginia	3.21	0.00	0.27	0.00	2.03	0.66	3.25	0.64	10.07
Washington	0.00	0.00	0.00	0.00	4.75	1.55	2.14	1.79	10.23
West Virginia	2.85	0.00	0.27	0.00	3.79	0.20	2.34	1.36	10.81
Wisconsin	2.98	0.00	0.46	0.00	2.89	0.20	3.31	0.55	10.39
Wyoming	0.00	0.00	0.00	0.00	2.73	0.36	2.63	3.50	9.22
Mean Values	**2.17**	**0.12**	**0.35**	**0.02**	**3.00**	**0.65**	**2.90**	**1.18**	**10.38**
Standard Deviation	**1.19**	**0.34**	**0.22**	**0.07**	**1.09**	**0.56**	**1.12**	**1.12**	**1.49**
Coefficient of Variation	**55.06**	**275.55**	**62.02**	**429.07**	**36.41**	**86.50**	**38.50**	**94.27**	**14.33**
NYS Diff. from Avg.	**1.28**	**0.88**	**(0.04)**	**0.44**	**(1.04)**	**0.82**	**1.54**	**(0.45)**	**3.43**

Source: Moody's Economy.com, U.S. Census Bureau

Table 8a - State Tax Burdens as a Percent of Personal Inome, 1977 - 2019					
Year	Mean	NYS	Standard Deviation	Coefficient of Variation	NY Difference from U.S. National Average
1977	7.07	7.69	1.47	20.81	0.62
1978	7.14	7.25	1.29	18.06	0.11
1979	7.12	7.07	1.66	23.28	(0.05)
1980	7.09	7.06	2.81	39.67	(0.03)
1981	7.20	6.92	4.22	58.62	(0.28)
1982	7.06	6.89	4.06	57.44	(0.18)
1983	6.75	6.64	2.57	38.04	(0.11)
1984	7.19	7.17	2.29	31.82	(0.02)
1985	7.06	7.14	2.06	29.14	0.08
1986	6.91	7.33	1.85	26.84	0.42
77-86 avg.	**7.06**	**7.11**	**2.43**	**34.37**	**0.06**
1987	6.86	7.44	1.28	18.69	0.59
1988	7.05	7.41	1.39	19.72	0.35
1989	7.05	6.86	1.46	20.69	(0.19)
1990	6.89	6.85	1.45	20.99	(0.04)
1991	6.80	6.35	1.58	23.25	(0.45)
1992	6.93	6.75	1.32	19.03	(0.17)
1993	7.03	6.60	1.58	22.48	(0.43)
1994	6.98	6.84	1.19	17.10	(0.14)
1995	7.09	6.84	1.37	19.31	(0.25)
1996	6.99	6.45	1.29	18.49	(0.54)
87-96 avg.	**6.97**	**6.84**	**1.39**	**19.97**	**(0.13)**
1997	7.01	6.23	1.31	18.64	(0.78)
1998	7.00	6.11	1.28	18.24	(0.89)
1999	6.87	6.16	1.32	19.19	(0.71)
2000	7.08	6.27	1.23	17.33	(0.81)
2001	6.80	6.25	1.20	17.59	(0.55)
2002	6.30	5.81	1.10	17.44	(0.49)
2003	6.35	5.70	1.09	17.09	(0.65)
2004	6.60	6.09	1.14	17.32	(0.51)
2005	6.90	6.50	1.34	19.45	(0.40)
2006	7.19	6.98	1.47	20.50	(0.21)
97-06 avg.	**6.81**	**6.21**	**1.25**	**18.28**	**(0.60)**
2007	7.16	7.10	1.61	22.53	(0.07)
2008	7.29	6.77	3.43	47.01	(0.51)
2009	6.33	6.59	1.87	29.59	0.27
2010	6.32	6.70	1.73	27.34	0.38
2011	6.55	6.81	1.93	29.39	0.26
2012	6.62	6.80	2.30	34.68	0.18
2013	6.54	6.66	1.86	28.42	0.12
2014	6.54	6.88	1.81	27.68	0.35
2015	6.40	6.71	1.69	26.35	0.30
2016	6.11	6.69	1.48	24.26	0.58
07-16 avg.	**6.59**	**6.77**	**1.97**	**29.72**	**0.19**
2017	6.14	6.33	1.41	22.90	0.19
2018	6.41	6.47	1.48	23.07	0.06
2019	6.52	6.13	1.61	24.64	(0.39)

Source: Moody's Economy.com, U.S. Census Bureau

Table 8b - State/Local Tax Burdens as a Pct. of Personal Inc., 1977 - 2019					
Year	Mean	NYS	Standard Deviation	Coefficient of Variation	NY Difference from U.S. National Average
1977	11.39	16.10	1.63	14.32	4.72
1978	11.37	15.39	1.46	12.87	4.02
1979	11.15	14.70	1.73	15.56	3.55
1980	10.95	14.57	2.89	26.39	3.62
1981	11.01	14.23	4.23	38.45	3.22
1982	10.76	14.02	4.15	38.57	3.27
1983	10.49	13.69	2.72	25.90	3.20
1984	11.01	14.39	2.48	22.55	3.38
1985	10.84	14.31	2.34	21.61	3.46
1986	10.71	14.53	2.15	20.08	3.82
77-86 avg.	**10.11**	**13.88**	**2.59**	**25.68**	**3.77**
1987	10.79	14.91	1.47	13.59	4.12
1988	11.04	14.87	1.52	13.73	3.82
1989	11.04	14.14	1.49	13.48	3.10
1990	10.87	14.07	1.46	13.47	3.20
1991	10.78	13.52	1.56	14.51	2.74
1992	10.95	14.35	1.34	12.20	3.40
1993	11.07	14.17	1.64	14.79	3.10
1994	11.07	14.40	1.10	9.91	3.32
1995	11.17	14.23	1.27	11.40	3.07
1996	10.98	13.69	1.08	9.88	2.72
87-96 avg.	**10.48**	**14.13**	**1.48**	**14.13**	**3.65**
1997	10.97	13.49	1.14	10.38	2.52
1998	10.95	13.26	1.11	10.10	2.30
1999	10.67	13.08	1.03	9.66	2.41
2000	10.86	13.05	1.04	9.55	2.19
2001	10.51	12.57	1.04	9.87	2.06
2002	10.05	11.94	0.94	9.35	1.89
2003	10.26	12.54	0.97	9.45	2.28
2004	10.58	13.49	1.06	10.05	2.91
2005	10.90	14.16	1.22	11.23	3.26
2006	11.26	14.97	1.38	12.29	3.71
97-06 avg.	**10.43**	**13.53**	**1.10**	**10.49**	**3.10**
2007	11.20	15.06	1.57	14.05	3.86
2008	11.30	14.34	3.44	30.46	3.04
2009	10.38	13.91	1.90	18.34	3.53
2010	10.55	14.43	1.75	16.61	3.88
2011	10.67	14.56	1.92	17.99	3.89
2012	10.54	14.48	2.28	21.59	3.94
2013	10.37	14.41	1.81	17.42	4.04
2014	10.45	14.98	1.76	16.80	4.54
2015	10.27	14.78	1.63	15.86	4.52
2016	9.95	14.61	1.48	14.91	4.66
07-16 avg.	**10.57**	**14.56**	**1.95**	**18.40**	**3.99**
2017	10.08	14.14	1.40	13.89	4.05
2018	10.34	14.17	1.47	14.25	3.83
2019	10.38	13.81	1.50	14.47	3.43

Source: Moody's Economy.com, U.S. Census Bureau

GLOSSARY OF ACRONYMS

ABT	Alcoholic Beverage Taxes
AFC	Automotive Fuel Carrier
AGI	Adjusted Gross Income
ART	Auto Rental Tax
BCP	Brownfield Cleanup Program
BCP-EZ	Expedited Brownfield Cleanup Program
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
CARES	Coronavirus Aid, Relief, and Economic Security
CBO	Congressional Budget Office
CDC	Centers for Disease Control and Prevention
CES	Current Employment Statistics
CFT	Corporation Franchise Tax
CPFF	Commercial Paper Funding Facility
CPI	Consumer Price Index
CPI-U	Consumer Price Index for All Urban Consumers
CUNY	City University of New York
CUT	Corporation and Utilities Tax
CV	Coefficient of Variation
CWCA	Clean Water/Clean Air
CY	Calendar Year
DCJS	Division of Criminal Justice Services
DFS	Department of Financial Services
DHBTF	Dedicated Highway Bridge and Trust Fund
DHCR	Division of Housing and Community Renewal
DOB	Division of the Budget
DOH	Department of Health
DOL	Department of Labor
DTF	Department of Taxation and Finance
EB	Extended Benefits
ECEP	Employer Compensation Expense Program
ENI	Entire Net Income
EPF	Environmental Protection Fund
EPU	Economic Policy Uncertainty
ESCO	Energy Service Companies
ETIP	Employee Training Incentive Program
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FFY	Federal Fiscal Year (October 1 to September 30)
FOMC	Federal Open Market Committee
FY	Fiscal Year
FYE	Fiscal Year Ending
GDP	Gross Domestic Product
HCRA	Health Care Reform Act
HUT	Highway Use Tax
HUTAA	Highway Use Tax Administration Account
IFS	Interactive Fantasy Sports
IFTA	International Fuel Tax Agreement
IMF	International Monetary Fund
IPO	Initial Public Offering
IPP	Intellectual Property Products
IRS	Internal Revenue Service
LATAs	Local Access Transport Areas
LGAC	Local Government Assistance Corporation
LIHC	Low Income Housing Credit
M&A	Mergers & Acquisitions
MBS	Mortgage Backed Security
MCTD	Metropolitan Commuter Transportation District
MCTF	Medical Cannabis Trust Fund
MLF	Municipal Liquidity Facility
MME	Morphine Milligram Equivalent
MMMFLF	Money Market Mutual Fund Liquidity Facility
MSA	Metropolitan Statistical Area
MSLP	Main Street Lending Program
MTA	Metropolitan Transportation Authority
MTOAF	Metropolitan Transit Operating Assistance Fund
NAFTA	North American Free Trade Agreement
NAICS	North American Industry Classification System
NBER	National Bureau of Economic Research
NIPA	National Income and Product Accounts
NMI	Net Machine Income
NYC	New York City
NYS	New York State
NYSE	New York Stock Exchange
OASAS	Office of Addiction Services and Supports
OPEC+	The Organization of the Petroleum Exporting Countries
OTB	Off-Track Betting
P/E	Price-to-Earnings
PBT	Petroleum Business Tax
PCE	Personal Consumption Expenditures
PDCF	Primary Dealer Credit Facility
PEUC	Pandemic Emergency Unemployment Compensation
PIT	Personal Income Tax
PMCCF	Primary Market Corporate Credit Facility
PMI	Purchasing Managers Index
PMT	Pari-Mutuel Tax
PPI	Producer Price Index
PPPLF	Paycheck Protection Program Liquidity Facility
PST	Professional, Scientific, and Technical Services
PTSOA	Public Transportation Systems Operating Assistance Fund

PUA	Pandemic Unemployment Assistance
PUC	Pandemic Unemployment Compensation
QCEW	Quarterly Census of Employment and Wages
QETC	Qualified Emerging Technology Companies
RBTF	Revenue Bond Tax Fund
REIT	Real Estate Investment Trust
RETT	Real Estate Transfer Taxes
RIC	Regulated Investment Company
SALT	State and Local Tax
SFY	State Fiscal Year (April 1 through March 31)
SLA	State Liquor Authority
SMCCF	Secondary Market Corporate Credit Facilities
STAR	School Tax Relief
STBF	Sales Tax Bond Fund
SUNY	State University of New York
TALF	Term Asset-Backed Securities Loan Facility
TCJA	Tax Cuts and Jobs Act of 2017
TMT	Truck Mileage Tax
TSC	Tribal State Compact
TY	Tax Year (January 1 through December 31)
U.S.	United States
U-3	Headline Unemployment Rate
U-6	Underemployment Rate
UI	Unemployment Insurance
UII	Unemployment Insurance Income
USD	United States Dollar
USMCA	United States-Mexico-Canada Agreement
VIX	Volatility Index
VLG	Video Lottery Gaming
VLT	Video Lottery Terminal

A NEW ERA FOR NEW YORK