

The New Strain of Inequality: The Economic Impact of Covid-19 in New York City

A report by James A. Parrott and Lina Moe

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THE NEW SCHOOL

CENTER FOR NEW YORK CITY AFFAIRS

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Center for New York City Affairs
72 Fifth Avenue, 6th floor
New York, NY 10011
212-229-5418
centernyc@newschool.edu
www.centernyc.org

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Introduction

New York City's economy is in a more precarious state than at any time since the 1970s fiscal and economic crisis. The current public health and economic crisis far surpasses the personal, psychological, and economic devastation wrought by 9/11, the 2008-09 Great Recession, or Superstorm Sandy. As of April 14, the City Health Department reported that over 10,000 New York City residents had been killed by Covid-19. The social distancing public health imperative at present has incapacitated a substantial portion of the city's economy. Job losses and new unemployment claims that have mounted since the beginning of the pandemic are unprecedented. An estimated 1.2 million New Yorkers have lost jobs in an environment where businesses have been ordered to close and non-essential personnel told to stay at home. This report identifies the workers and industries that are expected to experience the most profound displacement and economic losses as business closures and social distancing measures demanded by the health crisis continue.

The effects of this public health crisis are widespread, touching nearly every facet of New York City's economy, yet the fallout is also disproportionately affecting already-vulnerable workers and communities. This public health crisis has produced a new appreciation for the stark disparities of inequality that have been coagulating in the city's economic arteries. Three new categories of jobs characterize this moment: essential public health, safety and sustenance jobs; face-to-face service and production jobs (including many in the arts) that have been restricted; and mainly professional and managerial jobs that can be performed remotely. (For short, think of these categories as "essential," "face-to-face," and "remote.") Face-to-face service and production workers include those in restaurants, hotels, transportation, most construction, neighborhood personal services, administrative and building services, and non-essential (i.e., non-food or drug related) manufacturing and retail and wholesale trade.

While broad understanding of job, income, and wealth disparities has deepened considerably in the aftermath of the Great Recession, the current public health crisis has revealed a new dimension of inequality. The three worker categories we analyze occupy distinct places along a new spectrum of inequality: the great personal health risks borne by often underpaid workers in essential jobs; the total economic jeopardy visited upon great numbers of face-to-face workers, with many also more vulnerable to Covid-19 because of their socioeconomic status; and the sharply contrasting circumstance of remote workers (most of whom are professionals and managers) who still have their jobs and benefits, and whose daily existence puts them at much less risk of illness than the other two groups.

This report quantifies the magnitude and characteristics of the workers in the face-to-face category in New York City. We look at gig economy and other independent contract workers as well as traditional wage employees. We detail the industries, race-ethnicity, earnings, and other characteristics of these workers. We also provide estimates of the number of undocumented

workers who have been displaced in the economic shutdown. Finally, we discuss the daunting economic challenges New York City faces in the months and years ahead.

Highlights

- We estimate that the Covid-19 pandemic has cost New York City 1.2 million jobs. This figure represents a midpoint of high and low estimates based on industry-specific vulnerability to closure and impact. Our estimate is for the end of April and is measured from a February 2020 baseline level. The projected impact represents the loss of 27 percent of all private sector payroll and independent contractor jobs in the city.
- Some of this job loss involves layoffs and some temporary furloughs. At this point it is impossible to say how quickly dislocated workers may return to their jobs once the public health crisis moderates. The fear is that substantial numbers may be without work, and health insurance, for several months or more. The city's job trajectory from here depends mostly on the course of the public health crisis, but also on how the transition back to work is managed as well as the timing and magnitude of further federal economic assistance.
- There were a record number of initial unemployment claims in New York City in the first four weeks of the lockdown despite widespread reports of computer and call center problems. The record volume of filings is expected to continue through the month of April. Seven large states (Michigan, Pennsylvania, Washington, New Jersey, California, Massachusetts, and Ohio) have registered much higher ratios of new unemployment claims to employment than New York. Claims levels could double or more when processing catches up in New York.
- New York City's unemployment rate will soar well beyond February's 3.4 percent level and could reach the 20-30 percent range depending on job search activity in an environment of mass joblessness. Active job seeking is a condition of being counted as "unemployed."
- Five out of every six expected job New York City losses will occur in businesses largely providing face-to-face services, led by restaurants and hotels (251,000), transportation and warehousing (155,000), non-essential retail (139,000), personal and other services (114,000), administrative and support services (100,000), and arts and entertainment (88,000).
- Low-paid workers predominate in face-to-face service jobs and consequently have borne the brunt of job displacement. Nearly two-thirds (64 percent) of jobs lost to date during the pandemic were held by workers paid less than \$40,000 annually. Only 10 percent of lost jobs occurred among those paid \$100,000 or more annually. The likelihood of a low-income household (below 200 percent of federal poverty) having a Covid-19 displaced worker is a third higher than for all New York City households, 36 percent vs. 27 percent.
- Many workers in the hardest-hit sectors lacked employer-provided health insurance even before the pandemic; 21 percent were covered by Medicaid and 17 percent had no health insurance of any kind. Massive job losses will make this situation worse. There could be as many as 800,000 newly unemployed New Yorkers without health insurance. There likely will be a Covid-19-related surge in Medicaid enrollments.

- Independent contractors who already lack many basic labor protections will see nearly twice the rate of job displacement as wage and salary workers; 45 percent of independent contractors will lose their jobs compared to 25 percent of wage workers. The estimated 191,000 displaced independent contractors account for 15 percent of all workers losing their jobs in this crisis. Those working as taxi, Uber, or Lyft drivers, and workers in construction, personal services, and the arts will experience particularly heavy losses.
- Queens and the Bronx are home to the highest proportionate shares of workers in the face-to-face industries bearing the brunt of the Covid-19 jobs impact. The Bronx and Staten Island are home to much higher than proportionate shares of essential workers. The Bronx, for example, is home to 20 percent of all health care workers, more than any other borough.

Disproportionate effects on persons of color, younger adults, and workers not college-educated.

- Over two-thirds (68 percent) of job losses are among persons of color, with Latinx workers bearing a particularly high burden, experiencing 32 percent of lost jobs compared to a 26 percent share of all New York City private sector jobs. Black and Asian workers were proportionately affected.
- One-third of young adults ages 18-24 have lost jobs during the Covid-19 crisis, much greater than the citywide 27 percent displacement rate.
- Face-to-face services employ a greater share of less-educated workers than the other two categories identified here. Thirty-six percent of all city private workers with a high school education or less have lost jobs, compared to 20 percent of those with a four-year college degree or better who have been displaced.

Half of immigrant and half of undocumented workers have experienced Covid-19 job losses.

- While foreign-born workers held 49 percent of all private jobs before the pandemic crisis, they account for 54 percent of the lost jobs.
- Estimating the number of undocumented workers affected is necessarily imprecise, but many worked in industries hard hit by mandated closings, including restaurants, personal services, and construction. Nearly one in six New York City jobs lost due to the pandemic was held by an undocumented worker. The 54 percent displacement rate among undocumented workers is twice that of the 27 percent overall private sector displacement rate.
- Dislocated undocumented workers are not eligible for the federally funded Pandemic Unemployment Assistance recently authorized by Congress. This is particularly concerning considering the sizable number—192,000 by our estimate—who have lost jobs and been urged to stay home and not work during the crisis.

1. The economic effects of the Covid-19 crisis are different from recession job losses

The widespread social and economic effects of Covid-19 on New York City began with the first confirmed case on March 1st and accelerated rapidly after Mayor Bill de Blasio declared a state of emergency on March 13th that limited large gatherings. Following the mayor's order, schools were closed beginning March 16th and all restaurants, except for take-out and delivery, were directed to close beginning March 17th. Governor Andrew Cuomo followed with an executive order for all non-essential businesses statewide to close beginning at 8 pm on March 22. The Governor's order banned all non-essential gatherings for any reason and mandated social distancing of at least six feet between individuals in public.¹ Essential businesses allowed to continue operation included hospitals, laboratory services, grocery stores, pharmacies, food and medical equipment and supplies manufacturing, news media, banks, most construction (initially), public infrastructure such as airports and mass transit, public utilities, and public health and safety services.² As of this writing, the statewide ban on non-essential closures remains in effect through April 29.

Major cultural institutions across New York City, from museums and concert halls to Broadway theaters, were among the first major facilities to close in order to try to contain the spread of the coronavirus. Following the March 13th declaration of a state of emergency, closures soon spread to all non-essential businesses. By the last week in March, thousands of workers were being furloughed or laid off in clothing and other non-essential retail stores, neighborhood personal services, such as nail salons and domestic workers, and on most construction sites. While deemed essential, hotels scaled back dramatically as tourism and business travel evaporated, and plummeting trip volume among taxis and for-hire vehicles (Uber and Lyft, e.g.,) cut deeply into driver earnings. Businesses that can operate remotely, which encompass many office-based industries that are large employers in New York City, including financial institutions, professional and technical services, and colleges and universities, shifted operations to internet and phone and video-conferencing technologies. Responses to a national Gallup survey fielded March 16-22 indicated that ability to work from home was highly correlated with income.³

¹ City of New York, Office of the Mayor, Emergency Executive Order 100, March 16, 2020; State of New York, Department of Health, "New York State on PAUSE, 10-Point Plan," reflecting Executive Order 202.8, issued March 20, 2020.

² New York Empire State Development, "Guidance for Determining Whether a Business Enterprise is Subject to a Workforce Reduction under Recent Executive Orders," Updated April 9, 2020. <https://esd.ny.gov/guidance-executive-order-2026>.

³ Richard V. Reeves and Jonathan Rothwell, "Class and Covid: How the less affluent face double risks," Brookings blog, March 27, 2020.

2. Covid-19 job losses vary widely across three broad sets of industries

As noted in the Introduction, it is useful to distinguish among three categories of workers in the current crisis: essential public health, safety and sustenance jobs; face-to-face service and production jobs (including many in the arts) that have been restricted in the interests of social distancing; and mainly professional and managerial jobs that can be performed remotely. For convenience, we label these “essential,” “face-to face,” and “remote.”

Our job displacement estimates were informed by a range of government and private economic data, supplemented by extensive news reports of the impact on businesses, workers, and consumers. We reviewed several recent studies and economic and employment projections, many of which utilize similar conceptual frameworks to ours. These are discussed below. The methodology we employed is discussed in more detail in the Appendix.

Figure 1 shows a list of 20 private sector industries, grouped into our three designated categories. It presents baseline (pre-crisis) February 2020 employment levels and our plausible low and high estimates of Covid-19-related job displacements (expressed in percentage terms). Government employment, which includes many essential workers in hospitals, emergency medical services, the transit system, and the City sanitation, fire and police departments, are not included in our estimates since we would not expect job cutbacks in these fields in the first two months of this crisis (March and April), the time period for our estimates.

In New York City, the set of face-to-face industries account for 1.9 million jobs, 42 percent of all private sector jobs. These affected industries account for a larger workforce than remote industries, with 1.5 million jobs, or essential industries, with one million jobs (not counting the government portion). Not surprisingly, three of the industries included in the remote category (finance, professional services, and information) are considered by researchers to have the highest share of workers who can “telework”.⁴ Our estimates include independent contractors as well as payroll workers.

The expected job loss estimates for the first two months of the crisis are understandably very high for the face-to-face industries. The estimates for essential and remote industries are much lower, only exceeding 10 percent in the case of the information industry since it includes motion picture and television production, an activity that is a significant employer and utilizes several thousand independent contractors. Filming has been curtailed for the time being. Otherwise, job displacement is expected to be in the 5-10 percent range, reflecting some effect on non-essential activities. Banks have limited their hours and are not employing as many personnel as usual, and real estate sales activity has been sharply curtailed. Even hospitals, the focal point for the health care emergency, have reportedly laid off some non-essential personnel in an environment where usual hospital revenues have largely ceased. Since people are not eating out during this crisis, grocery stores have been exceptionally busy and some have hired additional workers, at least on a part-time basis, to keep up with demand. Distribution facilities for online retailing have also

⁴ Elise Gould and Heidi Shierholz, “Not everybody can work from home, Black and Hispanic workers are much less likely to be able to telework,” March 19, 2020, Economic Policy Institute.

seen heightened volumes and have hired additional staff. These offsetting job increases are factored into our estimates.

Figure 1

Low- and high-estimate New York City worker displacement rates resulting from Covid-19 impact, compared to February 2020 employment levels

<i>Estimated employment and impacts for combined number of wage payroll workers and independent contractors</i>	Baseline employment, Feb. 2020	Low estimate	High estimate
Essential industries (not including government services)			
Health care & social assistance except child care	809,700	5%	7.5%
Grocery, pharmacy and gas station retail trade	132,000	5%	10%
Food, drug, & beverage wholesale trade	48,200	5%	10%
Food manufacturing	17,600	5%	10%
Utilities	15,400	0%	0%
Subtotal--essential industries	1,022,900		
Face-to-face industries			
Restaurants and hotels	371,500	60%	75%
Administrative support services	304,700	25%	40%
Transportation and warehousing	259,000	50%	70%
Personal and other services	254,100	40%	50%
Retail trade except grocery, pharmacy and gas stations	222,700	50%	75%
Construction	170,100	27%	51%
Arts, entertainment, and recreation	130,100	60%	75%
Wholesale trade except food, drug and beverage	95,200	40%	75%
Child day care services	55,100	50%	75%
Manufacturing except food	54,300	40%	75%
Subtotal--face-to-face industries	1,916,800		
Remote industries			
Prof. sci., tech. & mgmt of companies	558,500	4%	8%
Finance, insurance and real estate	506,900	6%	12%
Educational Services (private)	269,600	6%	11%
Information **	218,100	11%	16%
Subtotal--remote industries	1,553,100		
Total *	4,493,900	22%	33%

* Low and high estimates for Total result from from impacts on individual industries

** Displacement estimates higher for information since it includes motion picture and television production, which is heavily affected

Note: Total includes agriculture, forestry and fishing.

Source: Authors' estimates.

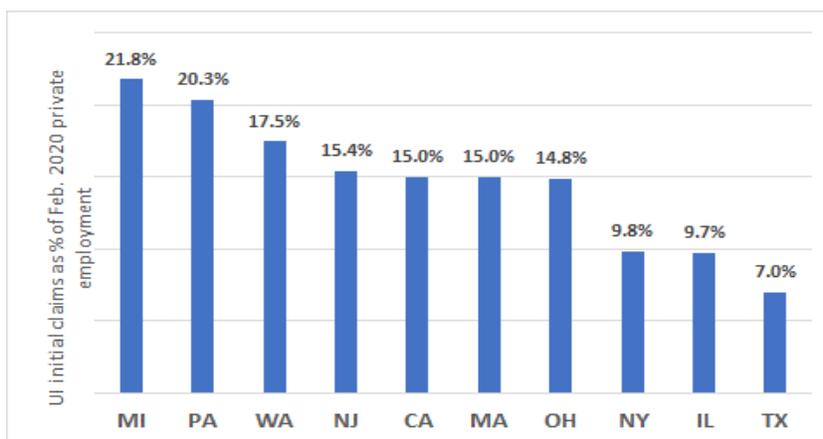
3. Record-high but still lagging initial unemployment claims data

The data most indicative of the already-devastating employment fallout are provided by the New York State Labor Department's initial unemployment claims data for the March 8-April 4 period. Even with widespread reports of massive problems experienced by dislocated workers in filing unemployment claims, the weekly volume of recorded claims has averaged 360,000 over the two weeks through April 4, and a total of 812,000 claims were filed over four weeks. This is 16 times greater than the comparable four-week period a year ago.

New York City has accounted for 337,000 of the statewide initial unemployment claims filed for the four weeks through April 4. This represents 42 percent of the state total, well short of New York City's 50 percent share of February's statewide private sector payroll employment. Given the filing access problems, the volume of initial claims is expected to increase substantially in coming weeks. Some portion of New York City's lower-than-proportional claims share is due to the fact that New York City has a higher proportion of office-based employment that is less affected by Covid-19-related displacements than the rest of the state.

Strong evidence to suggest that the pace of successful initial unemployment insurance (UI) claims filing in New York lags behind several other states is indicated in Figure 2. It compares the ratio of new claims filed for the four weeks through April 4 to total private employment for 10 large states, including New York. The ratio of initial claims to private jobs is 50 percent or higher in seven large states other than New York, led by Michigan and Pennsylvania, both of which have claims-to-jobs ratios more than twice as great as New York's. Considering the severity of the pandemic in the New York metro area, UI claims filing is almost certain to double in the weeks ahead compared to the March 8-April 4 period. New York City's 337,000 claims for the four weeks through April 4 are 8.3 percent of private employment.⁵

Figure 2
New York's new unemployment claims pace lags behind most large states



Source: U.S. Department of Labor, initial claims filed four weeks through April 4, 2020.

⁵ Statewide initial claims by government workers over this period were only 0.2 percent of all claims, a tiny fraction of the government employment 15.3 percent share of all New York nonfarm jobs in February 2020.

The recent claims data published by the State Labor Department includes a statewide industry breakdown. Those data are shown in Figure 3, along with February 2020 payroll employment levels, and likely reflect the relative magnitudes for New York City. The industries with the highest claims-to-baseline employment levels are all in our face-to-face category. (The State Labor Department data do not allow us to distinguish the essential vs. face-to-face industries within manufacturing, retail, or wholesale trade.) Statewide, 25 percent of all accommodation and food services workers filed initial unemployment claims over the four weeks through April 4. Arts and entertainment was second-highest, with 20.8 percent, followed by construction (16.2 percent), administrative support (13.4 percent), and transportation (13.0 percent).

Figure 3

New York State initial unemployment claims, four weeks through April 4, 2020, compared to February 2020 payroll employment, by industry

Industry	Initial unemployment claims, 4 weeks through Apr. 4, 2020	NYS payroll employment, Feb. 2020	4-wk claims % of Feb. employment
Accommodation and Food Services	189,037	756,600	25.0%
Arts, Entertainment and Recreation	33,001	158,400	20.8%
Construction, Utilities and Mining	68,130	419,400	16.2%
Administrative and Support Services	70,374	525,700	13.4%
Transportation and Warehousing	35,163	270,400	13.0%
Personal and Other Services	46,989	416,300	11.3%
Retail Trade	99,213	891,400	11.1%
Manufacturing	44,412	437,200	10.2%
Information	20,314	273,100	7.4%
Wholesale Trade	23,825	322,500	7.4%
Real Estate and Rental and Leasing	11,971	198,100	6.0%
Health Care and Social Assistance	87,640	1,661,100	5.3%
Professional, Scientific and Technical Services	27,189	695,300	3.9%
Educational Services	20,433	534,100	3.8%
Management of Companies and Enterprises	2,365	148,600	1.6%
Finance and Insurance	5,574	521,300	1.1%
Government	3,300	1,493,000	0.2%
Unclassified	22,281		
Total (Including Out of State Residents and Agricultural, forestry & fishing)	811,932		

Source: New York State Department of Labor, Initial Claims Data, April 9, 2020.

Eight out of 10 of the occupations with the greatest number of initial claimants are found within face-to-face industries. The occupational list (see Appendix Figure 1) is headed by food preparation and serving and also includes sales-related occupations (retail trade), construction,

personal care and service, transportation, production (manufacturing), installation, maintenance and repair (personal and other services), and arts, design, and entertainment occupations.

Independent contractors historically have not been eligible for unemployment insurance benefits since the businesses they work for avoid paying into the unemployment insurance trust fund by classifying workers as independent contractors rather than employees. However, the third round of federal response to the current crisis, the CARES Act, included a Pandemic Unemployment Assistance program that extends unemployment benefits to independent contractors for the first time on a large scale. The CARES Act was signed March 27, so dislocated independent contractors only began filing claims in early April. Because this is an entirely new program, the slow spread of information to previously ineligible workers as well as administrative challenges as guidelines are developed will likely slow the processing and fulfillment of these claims. As discussed more fully below, independent contractors account for about 15 percent of workers included in our displacement estimates.

Nearly three out of every 10 U.S. wage and salary workers are paid by the hour according to the Bureau of Labor Statistics,⁶ with many of these workers found in low-paying service positions such as those in the face-to-face sector. Another fairly concurrent economic indicator of job trends that informed the methodology in this report is data compiled by the personnel management software provider Homebase. Timekeeping software for hourly workers provided by Homebase is used by 60,000 predominantly small businesses across the country employing one million hourly workers. Homebase's primary customers include restaurant, food, and beverage businesses, and retail and service establishments and, according to Homebase, are largely "individual owned/operator managed businesses." Data on hours worked are provided with a lag of only a day or two and have been made available on the company's website.⁷

Figure 4 shows the dramatic falloff in the number of hourly employees working starting in mid-March as a result of the nationwide adoption of strict social distancing measures. By the end of March and early April, the decline in hourly workers compared to the same day of the week in January this year was in the 60-70 percent range nationally.

Homebase also provides its data by industry, state, and metro area. Taking April 1 as an example, nationally the decline in hourly workers was 59 percent compared to January of this year. The New York metro area had the second-greatest drop (-72 percent) in hourly workers among large metro areas, surpassed only by Detroit (-75 percent). Next were Boston, Pittsburgh, and San Francisco at 68 percent, New Orleans at 67 percent, and Chicago and Las Vegas at 66 percent.⁸

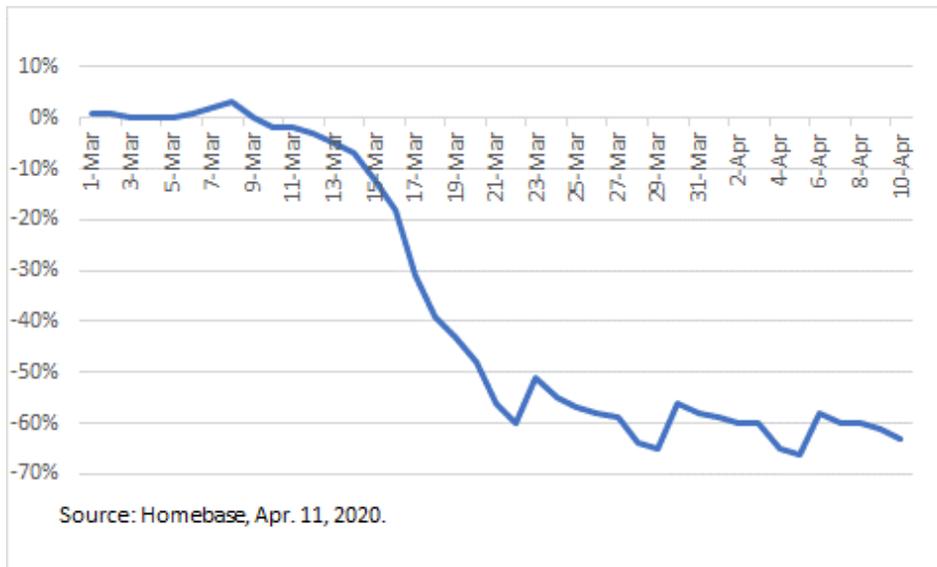
⁶ Bureau of Labor Statistics, Current Population Survey, Tables 21 and 44. <https://www.bls.gov/cps/tables.htm>

⁷ <https://joinhomebase.com/data/Covid-19/>

⁸ See, also, Alexander W. Bartik, Marianne Bertrand, Feng Lin, Jesse Rothstein, and Matt Unrath, "Labor Market Impacts of COVID-19 on Hourly Workers in Small- and Medium-Sized Businesses: Four Facts from Homebase Data," April 2020, Rustandy Center for Social Sector Innovation, University of Chicago, Booth School of Business.

Figure 4

Change in hourly employees working compared to the same day of the week during the month of January 2020, U.S.



4. Similar studies focusing on industry-by-industry analysis

Several other recent reports projecting job losses or examining the characteristics of workers losing jobs as a result of Covid-19 have employed a similar industry-by-industry methodology to that utilized in this report. The Economic Policy Institute has projected reduced labor demand at a state level by applying national projections of job losses to states, based on the relative importance of employment in leisure and hospitality and retail trade, the two sectors most heavily affected by State-mandated social distancing measures.⁹

An earlier study estimating detailed job displacement by sector for all 50 states that was published by The Century Foundation and co-authored by one of the co-authors of this report (Parrott), also projected job losses by applying higher displacement rates for the set of industries most affected by social distancing mandates.¹⁰ The Century Foundation report focused on payroll workers and did not separately estimate job losses suffered by independent contractors. In fact, this report (by the Center) appears to be the first to explicitly model the impact on independent contractors.

Researchers at the Brookings Institution modeled the likely impact of job displacement by demographic characteristic by examining the characteristics of workers employed in industries affected by measures taken to halt the spread of the coronavirus, including retail, passenger

⁹ David Cooper and Julia Wolfe, "Nearly 20 million workers will likely be laid off or furloughed by July," Economic Policy Institute, April 1, 2020.

¹⁰ Andrew Stettner and James Parrott, "Key Provisions in COVID-19 Stimulus Would Boost Unemployment Benefits by \$115 billion for 11+ Million Workers," The Century Foundation, March 25, 2020.

transportation, arts and entertainment, accommodation, restaurants, and various personal services.¹¹ A team of researchers at the Federal Reserve Bank of Boston employed a similar method to examine the characteristics of service workers affected by coronavirus containment measures in the six New England states. The Boston Fed study focused on those working in food service, cleaning and building maintenance, retail and hospitality, and warehouse jobs.¹²

5. Projections for sharp Gross Domestic Product drop

National economic forecasts have quickly been revised downward in recent weeks. The job displacement projection presented in this report is consistent with the most recent projections for the decline in gross domestic product (GDP) or unemployment. On March 20, economists at investment bank Goldman Sachs projected that real GDP would fall by six percent in the first quarter and by 24 percent in the second quarter. By the end of March, their projections were revised to a nine percent drop in the first quarter and a 34 percent decline in the second quarter. Even with a strong rebound in the last half of the year, Goldman Sachs expects a 6.2 percent GDP contraction for all of 2020, which would be the worst annual figure since the Great Depression. That outlook also predicts that national unemployment would be at 15 percent by the end of June but pointed out that such a level would likely understate the true extent of joblessness since many dislocated workers may not be actively looking for work given the bleak outlook. Goldman's chief economist noted that we may not see anything approaching "business as usual" until a proven vaccine is available.¹³

New York City's greater density should mean that the employment rebound is slower here than the average for the nation overall since consumers and workers will be more hesitant to quickly resume activities that involve personal proximity to others.

A new Weekly Economic Index developed by economists at the New York Federal Reserve Bank designed to capture factors influencing GDP trends has tracked steadily downward in recent weeks, from -3.2 percent for the week ending March 21, -6.8 percent for the following week, and -8.9 percent for the week ending April 4. The index's downward trend was driven by the surge in initial UI claims but also by sharp declines in fuel sales and steel production, along with decreases in rail traffic, electricity output, and income tax withholdings.¹⁴

¹¹ Alan Berube and Nicole Bateman, "Who are the workers already impacted by the COVID-19 recession?" Brookings Institution, April 3, 2020.

¹² Sara Chaganti, Erin Graves, Amy Higgins, Marybeth Mattingly, Sarah Savage, and Catherine Tonsberg, "The Effects of the Novel Coronavirus Pandemic on Service Workers in New England, Issue Brief 2020-1, March 2020.

¹³ Michael Rainey, "The Economic Outlook has Grown Darker, Goldman Sachs Says," Fiscal Times, March 31, 2020; and Jeff Cox, "Goldman says downturn will be 4 times worse than housing crisis, then an 'unprecedented' recovery," CNBC News, April 14, 2020.

¹⁴ Daniel Lewis, Karel Mertens, and James Stock, "U.S. Economic Activity during the Early Weeks of the SARS-COV-2 Outbreak," Staff Report 920, Federal Reserve Bank of New York, April 2020. The authors state: "We scale our baseline index to four-quarter GDP growth, such that a reading of 2 percent in a given week means that if the week's conditions persisted for an entire quarter, we would expect, on average, 2 percent growth relative to a year previous."

Following release of the initial UI claims data on April 9—which brought the national four-week total to 16.8 million—JPMorgan economists lowered their second quarter GDP forecast to a 40 percent drop, and expect a jump in April’s unemployment rate to 20 percent, with 25 million jobs lost.¹⁵ Former Federal Reserve Chair Janet Yellen, a highly regarded economist, said in early April that she expected a 30 percent GDP drop for the second quarter.¹⁶

In its mid-April economic outlook, the International Monetary Fund (IMF) projected a three percent decline in the global economy in 2020 as a result of the pandemic, a worse contraction than during the 2008-09 financial crisis. The IMF forecast for a 5.9 percent GDP decline in 2020 for the U.S. (vs. their two percent forecast for the U.S. in January) but noted the “extreme uncertainty around the global growth forecast.” IMF economists identified several factors contributing to this “extreme uncertainty:”

The economic fallout depends on factors that interact in ways that are hard to predict, including the pathway of the pandemic, the intensity and efficacy of containment efforts, the extent of supply disruptions, the repercussions of the dramatic tightening in global financial market conditions, shifts in spending patterns, behavioral changes (such as people avoiding shopping malls and public transportation), confidence effects, and volatile commodity prices. ... Risks of a worse outcome predominate.”¹⁷

6. Detailed job displacement estimates for 20 industries

We estimate that the Covid-19 pandemic has cost New York City 1.2 million jobs, the midpoint of high and low estimates based on industry-specific vulnerability to closure and impact. Our estimate is for the end of April and is measured from a February 2020 baseline level. Our low estimate is slightly under one million (at 992,000), and our high estimate is nearly 1.5 million. The 1.2 million midpoint projected worker impact represents the loss of 27 percent of all private sector payroll and independent contractor jobs in the city. (See Figure 5.)

Some of this job loss involves layoffs and some temporary furloughs. At this point it is impossible to say how quickly dislocated workers may return to their jobs once the public health crisis moderates. The fear is that substantial numbers may be without work, and health insurance, for several months. The city’s job trajectory from here depends mostly on the course of the public health crisis, but also on how the transition back to work is managed as well as on the timing and magnitude of further federal economic assistance.

¹⁵ Patti Domm, “JPMorgan now sees economy contracting by 40% in second quarter, and unemployment reaching 20%,” CNBC News, April 9, 2020.

¹⁶ Jeff Cox, “Janet Yellen says second-quarter GDP could decline by 30% and unemployment is already at 12%-13%,” CNBC News, April 6, 2020.

¹⁷ International Monetary Fund, “World Economic Outlook, Chapter 1, The Great Lockdown,” April 2020.

Figure 5
Estimated Covid-19 job displacement, New York City, April 2020

Private sector only	Baseline-- Feb. 2020	Low estimate	High estimate	Midpoint of 2 ests.	shares of baseline		Midpoint of 2 ests.
					Low estimate	High estimate	
All NYC Workers	4,494,000	992,000	1,464,000	1,228,000	22.1%	32.6%	27.3%
Wage & Salary Workers	4,070,000	835,000	1,239,000	1,037,000	20.5%	30.4%	25.5%
Independent Contractors	424,000	157,000	226,000	191,000	37.0%	53.3%	45.0%

Source: Authors' estimates.

Indications of economic distress abound in the press. Large retailers and hotel chains across the country that have sizable operations in New York City have already begun furloughing and laying off workers. JCPenney announced it would furlough a “significant” number of its 85,000 employees beginning April 5th, and Macy’s has furloughed most of its 130,000 employees.¹⁸ Marriott International, the nation’s largest hotel company, began to furlough what are expected to be tens of thousands of workers beginning in mid-March. Hotel occupancy in the city plunged by 80 percent, to just 15 percent for the week of March 22-28.¹⁹ Unite Here, the union representing a broad swathe of hotel and food service workers, has had its membership decimated by the coronavirus outbreak; 90 percent of its 300,000-plus members are out of work.²⁰ In a survey of nearly 2,000 restaurants in the first week following the mandatory closing order, the NYC Hospitality Alliance reported that almost 70,000 restaurant workers had lost their jobs.²¹

Film and television production, an industry employing 60,000-70,000 people in New York City has largely shut down.²² In New York City, cultural institutions reliant on large crowds are likely to approach re-opening cautiously. Broadway will remain closed through June and Lincoln Center, among other venues, has already canceled its summer programming.²³

While we estimate economy-wide job losses, the sectors hardest hit by job losses are largely face-to-face services, led by restaurants and hotels (251,000), transportation and warehousing (155,000), non-essential retail (139,000), personal and other services (114,000), administrative and support services (100,000), and arts and entertainment (88,000). (See Figures 6 and 7.)

¹⁸ Taylor Borden, “The coronavirus outbreak has triggered unprecedented mass layoffs and furloughs,” Business Insider, April 8, 2020. Craig Karmin, “Marriott begins furloughing tens of thousands of employees,” Wall Street Journal, March 17, 2020. Suzanne Kapner, “Macy’s, Gap to furlough most workers as coronavirus crisis keeps stores closed,” Wall Street Journal, March 30, 2020

¹⁹ Rich Bockman, “NYC hotels see 80% dive in occupancy,” The Real Deal, April 1, 2020.

²⁰ James Bandler, “Inside the union where coronavirus put 98% of its members out of work,” ProPublica, April 9, 2020. Victor Ordonez, “Hospitality labor union projects 90% of its members could lose jobs over coronavirus,” ABC News, March 18, 2020.

²¹ Tanay Warerkar, “New York Restaurants Have Lost At Least \$2 billion in Sales Due to COVID-19, Survey Says,” Easter New York, March 31, 2020.

²² Nancy Dillon, “NYC’s ‘booming’ film and TV industry grinds to a halt,” New York Daily News, April 4, 2020.

²³ Michael Paulson, “Broadway will remain closed at least until June, probably longer,” NY Times, Apr. 8, 2020.

Figure 6
Midpoint New York City job loss estimates compared to Feb. 2020 employment levels

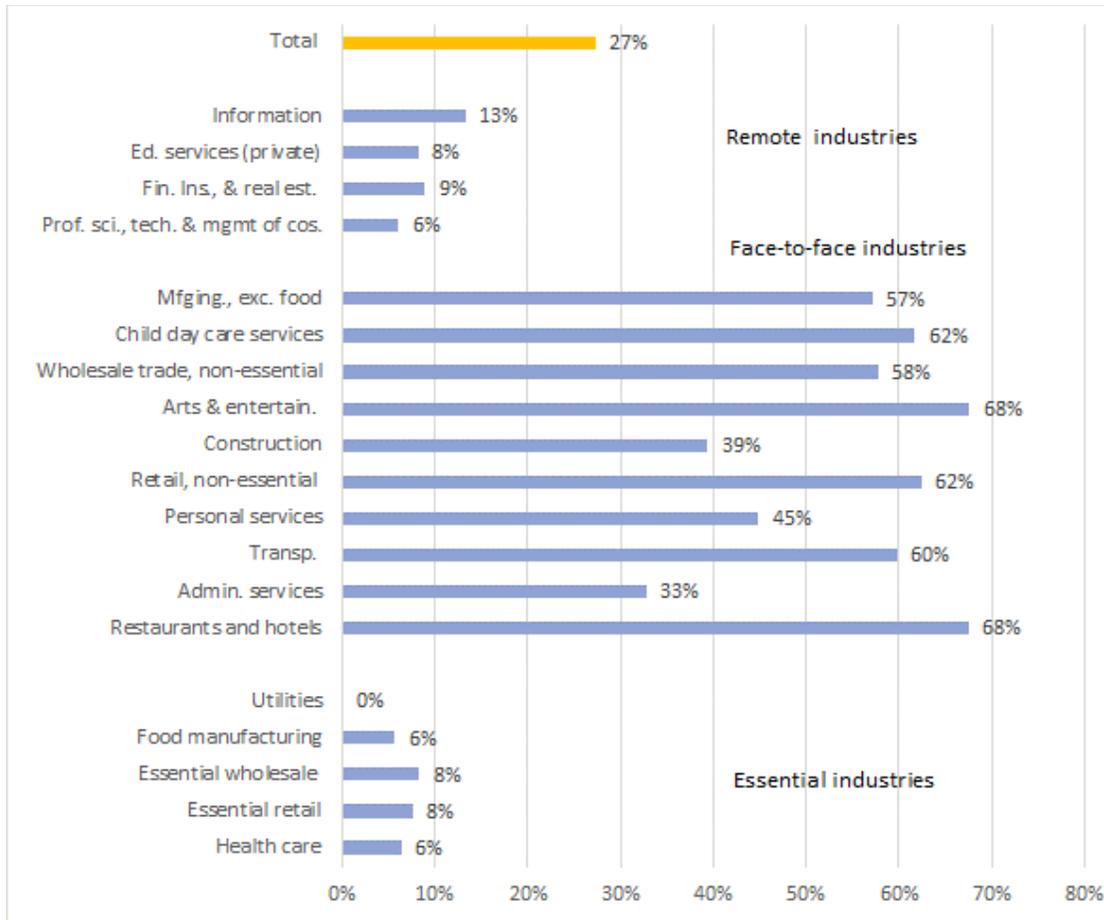
<i>Estimated employment and impacts for combined number of wage payroll workers and independent contractors</i>	Baseline employment, Feb. 2020	Job loss midpoint of estimates
Essential industries (not including government services)		
Health care & social assistance except child care	809,700	51,000
Grocery, pharmacy and gas station retail trade	132,000	10,000
Food, drug, & beverage wholesale trade	48,200	4,000
Food manufacturing	17,600	1,000
Utilities	15,400	0
Subtotal--essential industries	1,022,900	65,000
Face-to-face industries		
Restaurants and hotels	371,500	251,000
Administrative support services	304,700	100,000
Transportation and warehousing	259,000	155,000
Personal and other services	254,100	114,000
Retail trade except grocery, pharmacy and gas stations	222,700	139,000
Construction	170,100	67,000
Arts, entertainment, and recreation	130,100	88,000
Wholesale trade except food, drug and beverage	95,200	55,000
Child day care services	55,100	34,000
Manufacturing except food	54,300	31,000
Subtotal--face-to-face industries	1,916,800	1,035,000
Remote industries		
Prof. sci., tech. & mgmt of companies	558,500	34,000
Finance, insurance and real estate	506,900	45,000
Educational Services (private)	269,600	22,000
Information *	218,100	29,000
Subtotal--remote industries	1,553,100	128,000
Total	4,493,900	1,228,000

* Displacement estimates higher for information since motion picture production is heavily affected.

Note: Total includes agriculture, forestry and fishing. Totals and subtotals may not add due to rounding.

Sources: Authors' estimates.

Figure 7
Midpoint New York City job loss compared to February 2020 baseline employment



Source: Authors' estimates.

7. Demographic characteristics of dislocated workers

Based on a demographic analysis of employment patterns in these industries using the American Community Survey's 2014-18 five-year sample, we estimate that compared to a baseline distribution, those workers who experience job displacement are more likely to be men (58 percent) and persons of color (68 percent). Latinx workers bear a disproportionate burden, experiencing 32 percent of lost jobs compared to a 26 percent demographic share of all New York City private sector jobs. Black and Asian and other workers have proportionate representation among the likely dislocated workers. (See Figure 8.)

The economic downturn will disproportionately affect those who lack a college degree and young workers. Thirty-six percent of all city private workers with a high school education or less

have lost jobs while 20 percent of those with a four-year college degree or better have been displaced.

One-third of young adults ages 18-24 have lost jobs during the Covid-19 crisis, much greater than the citywide 27 percent displacement rate. More than half of all likely dislocated young adults worked in restaurants and hotels and non-essential retail trade. Even before the coronavirus struck, young people were facing challenging school-to-work transitions and metropolitan areas especially saw larger out-of-work young adult populations than before the Great Recession.²⁴ Now, young workers may face even bleaker job prospects considering the pe- crisis reliance on employment in restaurant and retail businesses.

Figure 8
Demographic characteristics of dislocated workers

		<u>Demographic shares of total</u>				
		Baseline-- Feb. 2020	Characteristics of displaced workers-- midpoint est.	Displaced workers as share of baseline	Baseline--	Dislocated
					Feb. 2020	workers
	TOTAL	4,493,900	1,228,000	27%	100%	100%
Gender	Male	2,335,900	717,000	31%	52%	58%
	Female	2,158,000	511,000	24%	48%	42%
Race/Ethnicity	White Alone	1,707,400	392,000	23%	38%	32%
	Black Alone	809,400	217,000	27%	18%	18%
	Hispanic	1,171,300	390,000	33%	26%	32%
	Asian & All Others	805,800	229,000	28%	18%	19%
Age	18-24	415,000	137,000	33%	9%	11%
	25-54	3,233,300	869,000	27%	72%	71%
	55+	845,600	223,000	26%	19%	18%
Education	Less than HS	508,400	194,000	38%	11%	16%
	High School	965,700	331,000	34%	21%	27%
	Some College	674,300	214,000	32%	15%	17%
	'Associates'	301,600	85,000	28%	7%	7%
	BA	1,313,400	295,000	22%	29%	24%
	Postgrad degree	730,600	109,000	15%	16%	9%

Source: Authors' estimates.

As a whole, the workers who will experience job displacement during the pandemic are overwhelmingly more likely to be low-income. Nearly two-thirds (64 percent) of jobs lost during the pandemic to date were held by workers paid less than \$40,000 on a yearly basis. Only 10 percent of lost jobs occurred among those paid \$100,000 or more annually. Among all city private jobs as of February 2020, 51 percent paid less than \$40,000 yearly and 18 percent paid

²⁴ Martha Ross and Natalie Holmes, "Meet the millions of young adults who are out of work," Brookings Institute, April 9, 2019. <https://www.brookings.edu/research/young-adults-who-are-out-of-work/>

\$100,000 or more.²⁵ The likelihood of a low-income household (below 200 percent of federal poverty) having a Covid-19 displaced worker is a quarter higher than for all New York City households, 36 percent vs. 27 percent. Because low-paid workers predominate in face-to-face service jobs, these job losses can be expected to exacerbate the trend in growing inequality between low- and high-income work.²⁶ Responding in early April to the rising economic need caused by massive job losses, New York City leaders pledged \$25 million to support emergency food programs, and the governor announced an additional \$200 million in food benefits will be available through the Supplemental Nutrition Assistance Program.²⁷ (See Figure 9.)

Figure 9
Income and earnings characteristics of Covid-19 dislocated workers

	Shares of total within category				
	Baseline employment, Feb. 2020	Income and earnings status of dislocated workers	Dislocated as share of baseline	Baseline employment, Feb. 2020	Dislocated workers
TOTAL	4,493,900	1,228,000	27%	100%	100%
Household income relative to federal poverty					
0-50 percent	110,500	37,000	33%	2%	3%
50-100 percent	245,800	89,000	36%	5%	7%
100-150 percent	318,500	117,000	37%	7%	10%
150-200 percent	339,900	121,000	36%	8%	10%
200-300 percent	626,800	204,000	33%	14%	17%
300+ percent	2,852,300	661,000	23%	63%	54%
Worker's annual earnings					
0-\$20,000	1,313,600	483,000	37%	29%	39%
\$20,000-\$40,000	989,900	301,000	30%	22%	25%
\$40,000-\$60,000	671,300	171,000	25%	15%	14%
\$60,000-\$100,000	724,100	149,000	21%	16%	12%
\$100,000+	794,900	124,000	16%	18%	10%

Source: Authors' estimates.

Many industries hard hit by social distancing requirements rely very heavily on immigrant workers, including those who are undocumented. While nearly half (49 percent) of all those

²⁵ The earnings levels in this analysis are from the 2014-18 American Community Survey and expressed in 2018 constant dollars.

²⁶ Juliana Menasce Horowitz, Ruth Igielnik and Rakesh Kochhar, "Most Americans say there is too much economic inequality in the US but fewer than half call it a top priority," Pew Research Center, January 9, 2020. <https://www.pewsocialtrends.org/2020/01/09/trends-in-income-and-wealth-inequality/>

²⁷ Michelle Bocanegra and Erin Durkin, "City pledges \$25M to emergency food network as system struggles to meet demand," Politico, April 10, 2020; and State of New York, Governor's Office, "Amid Ongoing COVID-19 Pandemic, Governor Cuomo Announces New York State is ramping up Antibody Testing, Critical to Reopening Economy," April 10, 2020.

working in New York City are foreign-born, 54 percent of Covid-19 dislocated workers are immigrants. Immigrants working in New York City are 20 percent more likely than their native-born counterparts to have been dislocated in the current crisis (30 vs. 25 percent.) Including both wage workers and independent contractors, 63 percent of all restaurant and hotel workers are immigrants, and 65 percent of construction workers, 72 percent of those working in personal services, and 77 percent of private transport workers are immigrants. (See Figure 10.)

Figure 10
Immigration status of Covid-19 dislocated workers

	Shares of total within category				
	Baseline employment, Feb. 2020	Immigration status of dislocated workers	Dislocated as share of baseline	Baseline employment, Feb. 2020	Dislocated workers
TOTAL	4,493,900	1,228,000	27%	100%	100%
Native born	2,304,800	565,000	25%	51%	46%
Foreign born	2,189,000	663,000	30%	49%	54%
Undocumented	358,000	192,000	54%	8%	16%

Source: Authors' estimates.

Estimating the number of undocumented workers affected is necessarily imprecise. Like immigrants overall, many undocumented worked in industries heavily affected during this public health crisis. Overall, we estimated that about 192,000 undocumented workers have lost their jobs as of mid-April.²⁸ This means that over half (54 percent) of all undocumented workers have been dislocated. For undocumented workers, their likelihood of displacement is twice that for local workers overall.²⁹ (See Figure 10.)

A. Specific industries with greatest job losses

Accommodation and Food services, including hotels and restaurants, is an industry with workers who are majority male (62 percent), lack a college degree (81 percent), and are overwhelmingly persons of color (79 percent versus 62 percent of all New York City workers). Nearly three-quarters of workers (74 percent) in this industry earn less than \$40,000 annually. Job losses are expected to total 251,000 in the five boroughs.

²⁸ See the Methodology section in the Appendix for information on how we estimated the number of affected undocumented workers by industry. Undocumented workers, including those who have overstayed their visas, can be found in every industry and occupation in New York City.

²⁹ See, also, Martin Guerrero, "City's Undocumented Latinos, Many on the Front Lines, Feel Abandoned Amid Pandemic," *City Limits*, April 11, 2020.

Transportation and Warehousing has a workforce that is overwhelmingly male (87 percent) and persons of color (81 percent). More than three-quarters of transportation workers (79 percent) lack a college degree, more than three-quarters (78 percent) live in a household below 200 percent of the federal poverty line, and 35 percent of these workers earn no more than \$40,000 annually. Transportation and warehousing jobs losses are expected to total 155,000.

Personal Services is an industry that encompasses a wide range of service jobs, including barbers, nail salon workers, maids, childcare workers, mechanics, massage therapists, tailors, and personal care workers. It has a workforce that is majority female (59 percent), persons of color (79 percent), and workers who lack a college degree (84 percent compared to 55 percent of all New York City workers). Almost three-quarters of personal services workers (72 percent) are foreign-born, nearly one-and-a-half times the likelihood among all New York City workers (49 percent). Personal service workers are nearly twice as likely as all New York City workers (43 percent versus 23 percent) to live in a household below 200 percent of the poverty line. Personal services jobs losses are expected to total 114,000.

Retail industry workers will sustain dramatically different rates of job losses based on whether their specific area of retail has been classified “essential,” including grocery, hardware, and drug stores, as well as those employed in e-commerce and by mass merchants vending health products. Non-essential retail that will be affected by closures comprises 138,600 wage and salary workers and independent contractors in New York City who are majority persons of color (66 percent). These workers tend to be younger (21 percent are 18-24 compared to 11 percent of all New York City workers) and more than half earn less than \$40,000 per year (63 percent).

While hundreds of thousands of wage and salary workers are experiencing devastating job displacement, the economic effect among the independent contractor workforce is also widespread. Independent contractors lack most of the basic labor protections and benefits that apply to employees but will see nearly twice the rate of job displacement as wage and salary workers: 45 percent of independent contractors will lose their jobs compared to 25 percent of wage workers. Across all industries with the highest rates of job displacement, independent contractors are more likely to be immigrants.

Gig workers and freelancers, from graphic designers to caterers, musicians, production assistants, and day laborers, have had their work disappear, especially where dependent on in-person concerts, performances, and events.³⁰ There is concern among freelancers who can work remotely that the unengaged independent contractor workforce will further weaken workers’ bargaining power and push wages down for available online work.³¹

The taxi and the app-dispatched for-hire vehicle industries have also been hard hit. By early April, trip volume had declined by 60-70 percent in New York City, drastically cutting into the earnings for taxi drivers and the 90,000 drivers who work in the app-dispatched ride industry.

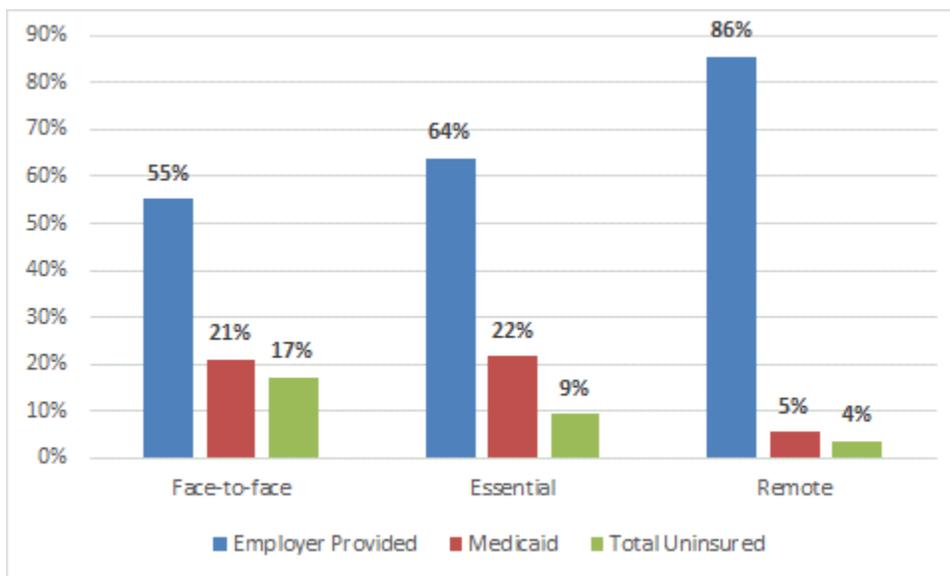
³⁰ David Gonzalez and Andrea Salcedo, “How gig workers are weathering the virus shutdown,” *New York Times*, April 6, 2020.

³¹ Kristina Monillos, “‘More volatile than ever’: Freelancers brace for a rough job market,” *DigiDay*, March 26, 2020.

B. Health insurance coverage

Health insurance coverage will be a huge challenge for New York City’s face-to-face industry workers who have lost or will lose their jobs as a result of the pandemic. To begin with, when employed they were less likely than essential or remote workers to have employer-provided health insurance for which they might be able to purchase COBRA coverage. Workers in face-to-face industries (17 percent) are nearly twice as likely as workers in essential industries (9 percent) to lack health insurance altogether and more than four times as likely as workers in remote industries (4 percent). Some affected industries have particularly high rates of uninsured workers, including restaurants and hotels (26 percent), construction (24 percent), personal services (21 percent), and administrative and support services (14 percent). Given the low earnings experienced by most face-to-face industry workers as well as by those in the food-related industries and in low-paid positions in health care, it is not surprising that more than one in five rely on Medicaid (in both face-to-face and essential categories). The number of people turning to Medicaid following loss of their jobs is likely to skyrocket in the months ahead.³² (See Figure 11.)

Figure 11
Health insurance coverage for New York City’s Face-to-Face, Essential and Remote Workers



Source: Authors’ analysis of 2014-18 ACS data for payroll workers.

³² Because very few independent contractors have health insurance through their work (those in the performing arts and movie and television production may be the exception with coverage through union health insurance plans), we did not include independent contractors in this discussion of health insurance coverage.

C. Queens and the Bronx home to many dislocated workers

Well over half of all workers in Queens and the Bronx work in the face-to-face industries (57 percent in the case of Queens and 56 percent for the Bronx); the citywide average is 48 percent. The Bronx and Staten Island have shares of essential workers 38 and 30 percent higher, respectively, than their all-worker shares. Manhattan, on the other hand, has a far larger share of remote workers (+67 percent) than its share of all workers. Brooklyn's share of essential workers is about 10 percent higher than its all-worker share and it has roughly proportionate shares of face-to-face and remote workers. Queens is home to one-third of all restaurant and hotel workers and 39 percent of private transport workers. Although the Bronx share of all New York City workers is 14 percent, it is home to 20 percent of all health care workers, a greater share than any other borough.³³ More than half (53 percent) of Manhattan's workforce is in the remote industries, but only 13 percent is in essential industries.^{34 35}

8. New York City's unemployment rate could climb to the highest levels since the 1930s

While an unemployment rate for April for New York City will not be released by the State Labor Department until May 21, the rate will soar well beyond the most recent published figure of 3.4 percent (February) available at this writing. In February, there were 137,500 unemployed New Yorkers. With the potential loss of 1-1.5 million jobs since then and allowing for some departures from the labor force and for the fact that commuters will account for some portion of the lost jobs, the April unemployment rate for New York City residents could range as high as from 22 to 31 percent.³⁶ The "official" unemployment rate could be lower if substantial numbers of jobless workers are not actively seeking employment, a condition of being counted as "unemployed" in the monthly survey used to estimate "official" unemployment. Considering the unprecedented extent of joblessness and concerns workers might have about re-entering public places and using mass transit, the reported unemployment rate in the months ahead could significantly understate true job market conditions. (See Figure 12.)

³³ The Bronx has also been hit disproportionately hard by the Covid-19 crisis itself. With 17 percent of the city's population, the Bronx accounted for 26 percent of Covid-19 related deaths as of the first week in April. Abigail Savitch-Law, "Bronx and Other Hard-Hit Communities Cry Out for Covid-19 Resources, City Limits, April 9, 2020.

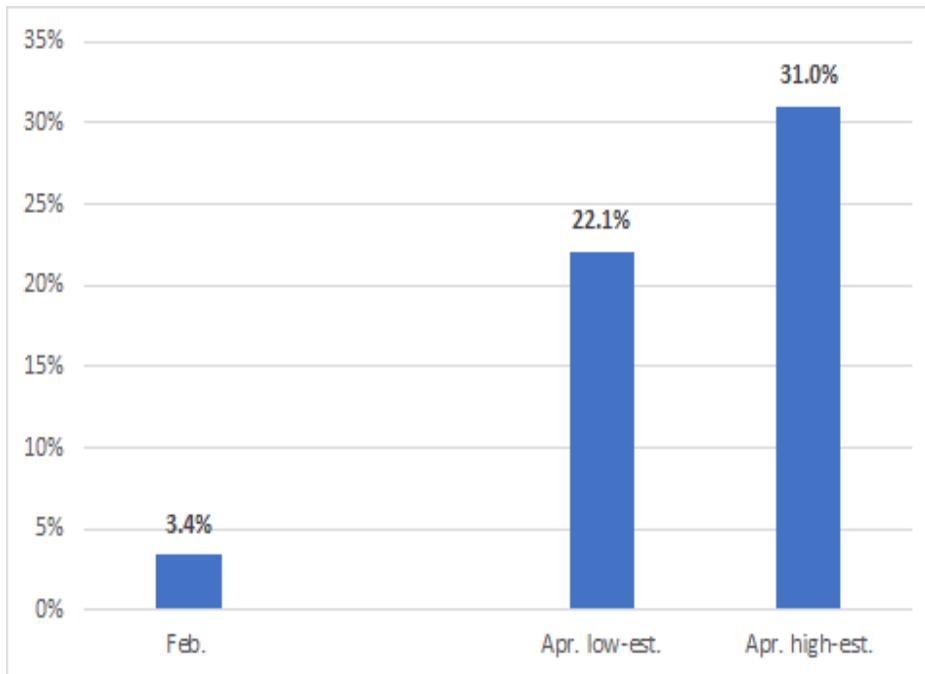
³⁴ The data in this paragraph is from an analysis of ACS data for New York City residents, by industry, with the industries grouped into the three categories identified in Figure 1.

³⁵ A recent report by the New York City Comptroller's Office documented that what it called "frontline" workers ("essential workers" in this report), tend to be concentrated in Brooklyn, Queens and the Bronx. The report noted that many frontline workers are low-paid, lack health care, travel long distances to their jobs, and struggle with childcare. Many are undocumented. New York City Comptroller, "New York City's Frontline Workers," March 2020.

³⁶ Our estimates assumed that nonresident commuters held 10 percent of the jobs that are lost, and that 15 percent of the remainder would exit the labor market.

Figure 12

New York City's unemployment rate could rise as high as 30 percent as a result of the Covid-19 job losses



Source: Authors' analysis.

Conclusion

This is the most serious crisis the nation has faced since the Great Depression, World War II, or the darkest days of the Cold War. The public health crisis has taken 10,000 lives in New York City in little more than a month, and it has created an economic crisis more severe and harder to confront than any since the 1930s. Like the public health effects, the economic impact has fallen hardest on low-income communities of color in New York City. More than two-thirds of the estimated 1.2 million Covid-19 dislocated workers are persons of color, and 64 percent have earnings under \$40,000 annually. In addition to losing their wages, hundreds of thousands of dislocated workers will also lose their health insurance.

Emergency federal assistance to unemployed workers and their small business employers will help stave off economic disaster for many. However, those programs face daunting administrative problems, and flawed program design in the case of the small business grant program, since it is premised on an unrealistically early end to social distancing measures and insufficiently allows for the cost of renting space. The estimated 190,000 dislocated undocumented workers—half of all undocumented workers in New York City—are denied access to federal economic assistance by policy-makers choosing to ignore the serious public health and humanitarian consequences.

In many ways, we are observing the emergence of a new strain of inequality—one that exposes in a more visceral sense than before the stark precariousness of most low-wage work. This involves not only low pay but poor or no health insurance, little or no paid leave, no on-the-job health and safety protections, and only a shrinking and tattered safety net to fall back on. Precarious lives concentrated in crowded and poorly housed neighborhoods have become an electromagnet in attracting the deadly virus.

The crisis has also exposed the existential importance of well-functioning government—at all levels. Ending the twin public health and economic crises requires the well-informed coordination of testing, tracing, and treatment, protecting frontline health care workers, as well as whatever else it takes to restore public confidence in the safety of returning to public spaces and workplaces. Essential for all that is sufficient federal funding to enable state and local governments to carry out this mission on the ground (at a time when many local tax revenues are falling), the provision of adequate economic assistance to those most in need, and well-targeted help to small businesses to get back on their feet.

It is too early to say how long the magnitude of job losses estimated in this report will continue. Undoubtedly there will be a tapering at some point this year, but immense local labor market and economic challenges will remain for the foreseeable future.

Appendix

Methodology

There are no precedents in the post-World War II period to examine in order to model the likely economic and employment impact of a pandemic of the scale we are now witnessing. The economic repercussions of the measures taken to lockdown business and social activity in the interest of public health are considerably different from the effects usually associated with a recession or severe economic slowdown.

To develop estimates of the likely job displacements related to the government-ordered social distancing measures due to the Covid-19 pandemic, we first identified 20 industry categories to correspond to the three categories of economic activity with distinct features in this crisis: essential public health, safety and sustenance jobs; face-to-face service and production jobs (including many in the arts) that have been restricted in the interests of social distancing; and mainly professional, administrative and managerial jobs that can be performed remotely. For convenience, we label these “essential,” “face-to face,” and “remote.” Figure 1 in the body of the report shows how the 20 industry groupings were allocated among these three categories.

In several cases, we needed to differentiate industries within the customary sectors—essential vs. non-essential retail, wholesale and manufacturing. Almost all of the health care and social assistance sector is considered essential; these include hospitals, laboratory services, nursing homes, home health care providers, and social assistance organizations caring for vulnerable populations such as operating homeless shelters. On the other hand, since most child care services have been closed along with schools except for child care operations serving the children of essential workers, we include child care services in the face-to-face category.

We did not include the government sector in our analysis since we assumed that government employers would not be laying off workers during the crisis. The extremely low rate (0.2 percent) of initial unemployment claims relative to government employment recorded during the four weeks through April 4 confirms that job reductions in the government sector are unlikely in the early weeks of the pandemic. This circumstance might change in the event that State and local revenue declines are not made up by federal fiscal relief and the City and/or the State start reducing staffing levels.

Relying on UI initial claims data, WARN notices filed with the State Labor Department, other private and public economic data, local and national news reports, economic studies and drawing from Parrott’s long record of analyzing the New York City economy and labor market including through 9/11 and recessions dating back to the early 1990s downturn, we developed plausible low and high estimates of job displacement for each of the 20 industries. The estimates varied greatly depending on which of the three broad categories an industry fell into.

Building up the expected industry-by-industry effects resulted in a low estimate for payroll workers of about 20 percent and a high estimate of about 30 percent. The industry estimates were slightly higher for independent contractors than for payroll workers, reflecting the more variable status experienced by independent contractors. The sizable presence of independent contractors in transportation and construction, e.g., both heavily affected industries, meant higher proportionate declines for both the overall low and high estimates for independent contractors,

37.0 percent and 53.3 percent, respectively. On a combined payroll worker plus independent contractor basis, the ratio of the overall 32.6 percent high estimate and the 22.1 percent low estimate is slightly under 50 percent. This makes the predicted range of low and high estimates effectively plus or minus about 25 percent of the midpoint. See Figures 1 for the industry specific combined low and high estimates, Figures 6 and 7 for the midpoint estimates, and Figure 5 for the respective overall low and high estimates for wage and salary workers and independent contractors.

These estimates built on two earlier estimates for New York City: the first released on March 15 projecting 500,000 lost jobs by the end of March; and a revision of that to 750,000 made on March 23. Parrott also worked with Andrew Stettner of The Century Foundation on nationwide sector-based estimates for 10 broad sectors that were then applied to sector employment levels for all fifty states. The Century Foundation report was released on March 25.³⁷

Worker displacement estimates were developed separately, by industry, for payroll workers and for independent contractors. We analyzed the demographic characteristics of those working in the 20 industry groups, as payroll workers and as independent contractors, in New York City using the 2018 five-year American Community Survey file.

Given the fact that many workers are not included in the payroll employment data traditionally the focus of most economic studies, we separately analyzed the characteristics of workers categorized as self-employed, unincorporated in the American Community Survey (ACS) data. The ACS identifies workers according to their primary job and most of the self-employed unincorporated workers work on a full-time basis. We consider these workers to be independent contractors and consulted the Census Bureau's Nonemployer Statistics data and various studies of independent contractors in making adjustments to the levels for selected industries to approximate a February 2020 baseline level.³⁸ For example, there are approximately 100,000 for-hire vehicle drivers in New York City driving for Uber and Lyft. The companies consider the drivers independent contractors. Most of these drivers were full-time prior to the pandemic, yet the ACS data indicated a much lower number of self-employed unincorporated drivers in private transportation. In cases like this, the ACS independent contractor estimates were adjusted to better reflect worker levels for the February 2020 baseline.

For the February 2020 payroll worker baseline, we used the New York State Labor Department's establishment survey estimates. In a few cases, we needed to use the greater industry detail of the Quarterly Census of Employment and Wage series to allocate February 2020 employment where industry groups included some industries in essential and some in non-essential categories. Starting from the February 2020 baseline levels for payroll workers and independent contractors, we applied the industry-specific low and high estimates for job displacement. We then applied the demographic shares for that industry to generate estimates by demographic characteristic for each industry's payroll workers and independent contractors. We then combined the two groups of workers to reach a total number of displaced workers for each of the 20 industries. To simplify

³⁷ Andrew Stettner and James Parrott, "Key Provisions in COVID-19 Stimulus Would Boost Unemployment Benefits by \$115 billion for 11+ Million Workers," The Century Foundation, March 25, 2020.

³⁸ Lina Moe, James A. Parrott, and Jason Rochford, *The Magnitude of Low-Paid Gig and Independent Contract Work in New York State*, Center for New York City Affairs, February 2020.

the presentation of the results from the low and high estimates, we use the midpoint of the low and high estimates. Those results are the ones presented in Figure 7.

To analyze the borough residence of affected workers, we used the ACS place of residence variable, and the three categories of industries (face-to-face, essential, and remote). To estimate the number of dislocated undocumented workers by industry, we started with the New York City Mayor's Office of Economic Opportunity estimate of 360,000 undocumented workers for 2017³⁹ and distributed that, with some adjustments, across the 20 industries analyzed here based on shares of non-citizen immigrants.

³⁹ New York City Mayor's Office of Economic Opportunity, *An Economic Profile of Immigrants in New York City 2017, Results from NYC Opportunities Experimental Population Estimate*, February 2020.

Appendix Figure 1

New York State initial unemployment claims, two weeks through April 4, 2020

Occupational group	Initial unemployment claims, two weeks through Apr. 4
Food Preparation and Serving Related	90,265
Office and Administrative Support	75,228
Management	61,767
Sales and Related	57,566
Construction and Extraction	41,914
Personal Care and Service	35,641
Transportation and Material Moving	35,008
Production	31,477
Installation, Maintenance, and Repair	21,180
Arts, Design, Entertainment, Sports, and Media	20,594
Healthcare Practitioners and Technical	19,913
Education, Training and Library	19,430
Building and Grounds Cleaning and Maintenance	19,137
Healthcare Support	17,065
Business and Financial Operations	9,557
Protective Service	5,988
Architecture and Engineering	4,672
Legal	3,894
Community and Social Service	3,262
Computer and Mathematical	2,716
Life, Physical and Social Science	1,740
Military Specific	612
Farming, Fishing, and Forestry	547
Not Available	137,425
Total (Including Out-of-State Residents)	716,598

Source: New York State Department of Labor, Initial claims data, Apr. 9, 2020.