

The Economic Impacts of COVID-19: Evidence from a New Public Database Built Using Private Sector Data

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How has COVID-19 affected our economy and what policies will foster a recovery for all Americans?

Government surveys of households and businesses show that the onset of COVID-19 reduced GDP and increased unemployment sharply. These sources, while critical for measuring the scope of the crisis, are more limited in their capacity to inform policy decisions. In particular, national surveys are neither frequent nor large enough to reveal how the crisis affected specific areas or subgroups.

In response to this challenge, we created the [Opportunity Insights Economic Tracker](#), a freely available interactive website that measures economic activity at a granular level in real time. The tracker was built using anonymized data from several private companies, such as credit card processors and payroll firms. From this data, we constructed statistics on consumer spending, employment rates, and other indicators by county, industry, and (pre-crisis) income level. These new statistics allowed us to study how COVID-19 has affected the economy with unprecedented precision.

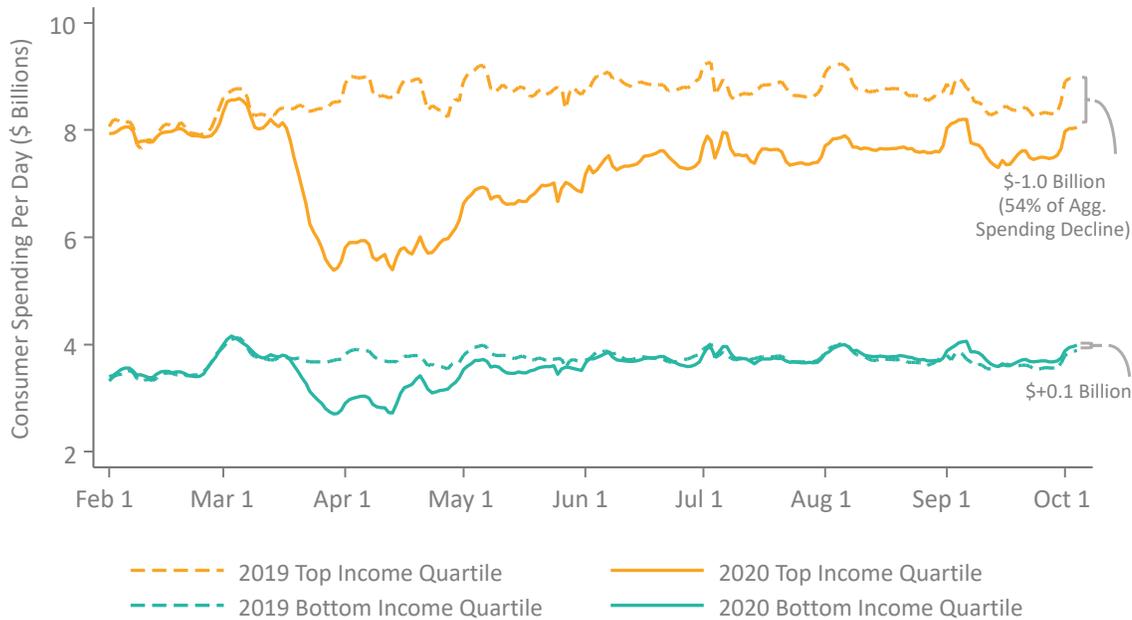
Because government statistics reveal that almost all the reduction in GDP came from a decline in consumer spending, we began by studying the drivers of this sharp drop in spending. We then

KEY FINDINGS

- High-income households accounted for most of the reduction in spending.
- Small business revenues declined most in affluent areas.
- Job losses at small businesses were largest in affluent areas.
- High-wage workers experienced a “V-shaped” recession that lasted a few weeks, whereas low-wage workers experienced much larger, more persistent job losses.
- Stimulus payments became less effective as the pandemic continued.
- The pandemic led to a persistent reduction in labor supply among low-wage workers in the hardest-hit areas.

examined the impacts of spending reductions on businesses and workers. Finally, we analyzed the effects of policies enacted to mitigate these economic impacts and discussed what our findings imply for policy going forward.

FIGURE 1: High-Income Households Sharply Reduced Their Spending at the Start of the Pandemic



This graph plots spending for households in the top vs. bottom 25 percent of the income distribution in 2019 and 2020. Income is imputed based on the ZIP code where households live. Data Source: Affinity Solutions.

FINDING 1:

High-income households accounted for most of the reduction in spending.

Most of the reduction in consumer spending was attributable to high-income households. Between January 2020 and May 31 2020, more than two-thirds of the total reduction in credit card spending came from households in the top 25 percent of the income distribution. Meanwhile, households in the bottom 25 percent continued to spend at the same levels they had before the crisis, as illustrated in Figure 1.

High-income households cut spending primarily because of health concerns rather than a loss of income or purchasing power. Spending fell most on services that require in-person interaction and thereby carried a higher risk of COVID-19 infection, such as transportation and food services.

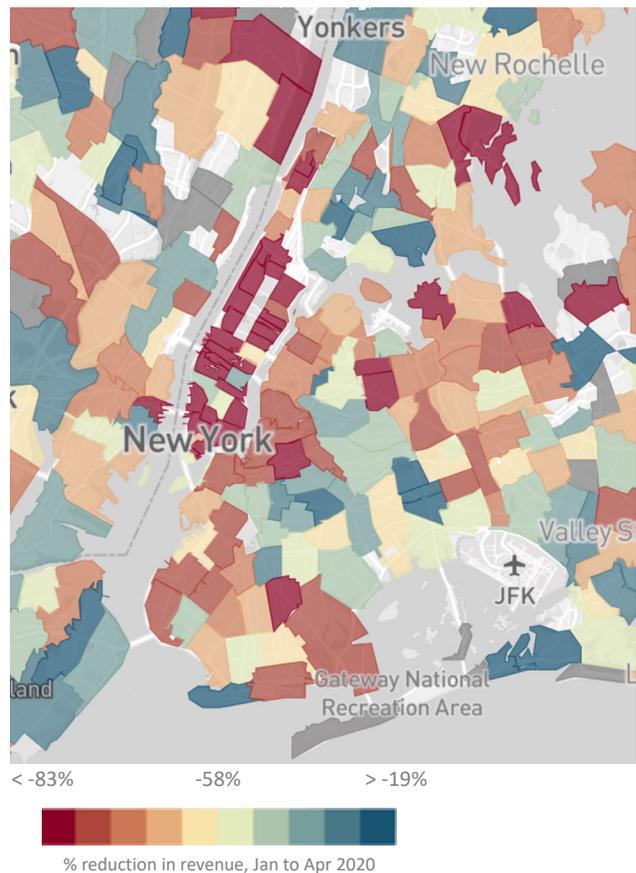
The pattern of spending reductions during this recession differs from that of prior recessions in that spending on services remained essentially unchanged while spending on durable goods (e.g., new appliances or cars) fell sharply.

FINDING 2:

Small business revenues declined most in affluent areas.

Small businesses in the most affluent ZIP codes — which tend to cater to high-income customers — lost more than 50% of their revenue when COVID-19 hit, as compared with 30% in the least affluent ZIP codes. This pattern is illustrated in the map of New York City in Figure 2 where businesses in areas with higher rents (e.g., the Upper East Side of Manhattan) lost far more revenue than those in areas with lower rents (e.g., Harlem or the Bronx).

FIGURE 2: Business Revenue Loss was Greatest in the More Affluent Parts of the City



This map shows reductions in small business revenues by ZIP code in NYC between Jan to Apr 2020. Red areas show places where businesses lost more revenue. Data Source: Womply

FINDING 3:

Job losses at small businesses were largest in affluent areas.

As businesses lost revenue, they laid off their employees. In the highest-rent ZIP codes, more than 50% of low-wage workers at small businesses were laid off within two weeks after the COVID-19 crisis began; by contrast, in the lowest-rent ZIP codes, fewer than 30% lost their jobs.

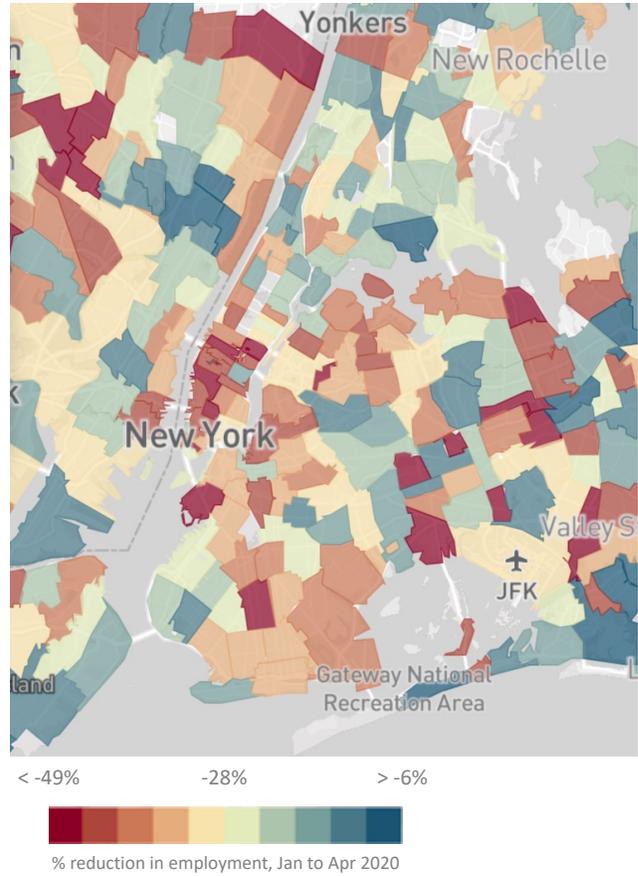
The map in Figure 3 illustrates this result by showing employment rate reductions among low-wage workers by ZIP code in New York. Lower-income people working in wealthier areas of the city were most likely to have lost their jobs, mirroring the pattern of small business revenue losses. Businesses in more affluent areas not only laid off more low-wage workers but also posted fewer jobs to hire new workers, suggesting that the recovery may take longer in such areas.

FINDING 4:

High-wage workers experienced a “V-shaped” recession that lasted a few weeks, whereas low-wage workers experienced much larger, more persistent job losses.

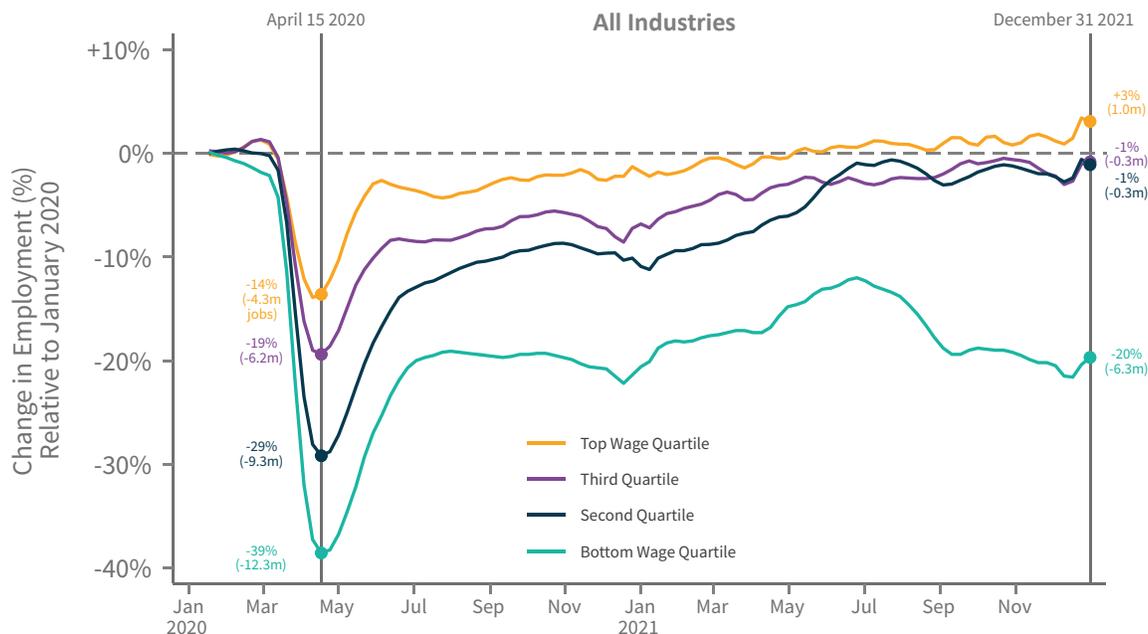
Employment for high-wage workers rebounded very quickly: employment levels for workers in the top wage quartile returned to pre-COVID-19 levels by the end of June 2020. In contrast, employment recovered much more slowly for lower-wage workers. The total number of jobs in the bottom quartile of the pre-pandemic wage distribution remained 21.2% below baseline even as of December 2021. While 7.7% of this reduction can be explained by wage growth (i.e., workers who were in the bottom quartile at the start of the pandemic, but whose wages increased such that they were shifted into a higher wage quartile as of December 2021), the remaining 13.5% reduction was due to changes in employment patterns — either exits to unemployment or switches to higher paying jobs.

FIGURE 3: Low-Wage Workers Experienced Greatest Job Loss in the More Affluent Parts of the City



This map shows reductions in employment rates for low-wage workers by the ZIP code of their employer in NYC between Jan to Apr 2020. Red areas show places where workers were more likely to lose their jobs. Data Source: Earnin

FIGURE 4: Employment Rates for High-Wage Workers Recovered Quickest



This graph plots changes in employment rates by wage quartile from Jan 2020 to Dec 2021. Data sources: Paychex, Intuit, Affinity Solutions.

FINDING 5:

Stimulus payments became less effective as the pandemic continued.

The federal government sent households stimulus checks at three points during the crisis: April 15, 2020, January 4, 2021, and March 17, 2021. The payments made in April 2020 increased spending fairly uniformly across the household income distribution, with both low- and high-income households increasing spending substantially in the days after they received checks.

In contrast, the impacts of the January 2021 payments varied across the income distribution: low-income households once again spent a substantial fraction of their stimulus checks, but high-income households spent little or none of the money they received. These results were cited in policy debates regarding who should receive the March 2021 stimulus payments, which ultimately concluded with policymakers phasing out benefits more rapidly for high-income households than initially proposed.

Finally, as predicted based on impacts of the January stimulus, we find that the March 2021 stimulus payments had large impacts on spending for low-income households but little impact on spending for high-income households who remained eligible.

FINDING 6:

The pandemic led to a persistent reduction in labor supply among low-wage workers in the hardest-hit areas.

At the outset of the pandemic, sharp reductions in consumer spending, particularly among high-income households, led to

smaller business revenues and lowered employment rates. As the pandemic continued, however, employment rates remained low even in areas where spending was buoyed by stimulus programs. In December 2021, employment rates among low-wage workers were still considerably lower in places where high-income people cut back on spending sharply two years ago (i.e., areas that experienced the largest initial shocks to economic activity at the outset of the pandemic), suggesting persistent reductions in labor supply in such areas — trends that underscore the potential for further growth in inequality over the coming years.

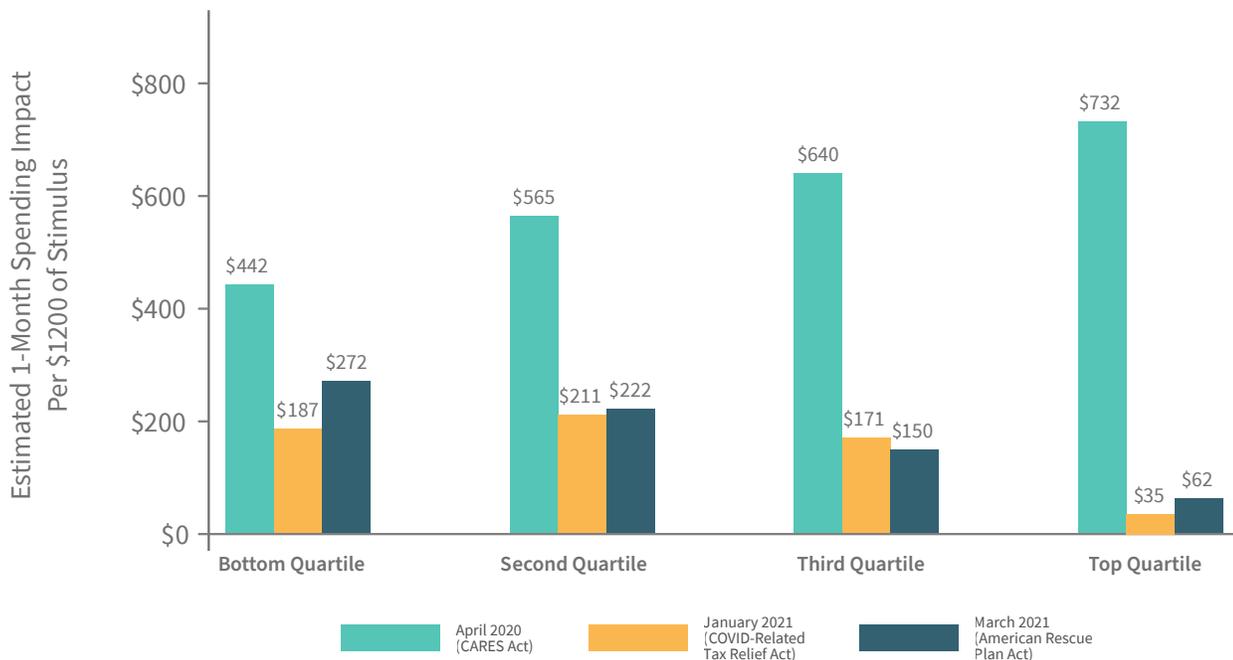
WHAT THIS ANALYSIS MEANS FOR POLICY GOING FORWARD

Our findings suggest that fiscal policies such as economic stimulus checks can be valuable for limiting secondary declines in consumer spending arising from a loss of income due to unemployment. However, fiscal policy itself does not have the capacity to restore employment to original rates when the initial shock to consumer spending arises from health concerns.

Even after health concerns have abated, changes in labor supply among those who lost their jobs may lead to persistent reductions in employment. It may be useful to target job training programs and re-employment efforts to individuals who held low-wage jobs in the affluent, urban areas where job losses were largest.

Our [data](#) offers a new way of monitoring economic activity and evaluating policy impacts on an ongoing basis, such as within areas and sectors where job losses persist. More broadly, this approach shows how private sector can be used to construct publicly available statistics that can support research and real-time policy analyses.

FIGURE 5: The Spending Effect from Stimulus Payments Wore off as the Pandemic Continued, Particularly for High-Income Households



This graph shows the effect of the COVID Stimulus Bills on spending (per \$1,200 check), by income group. Data source: Affinity Solutions.

Want to learn more?

[Read the Paper](#)

[See the Presentation Slides](#)

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