

U.S. Urban Crime Trends During Covid-19

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1 Executive Summary

Using city-level crime data for six major U.S. cities from Jan 2¹ to May 30 2020, we document an approximately 20% average reduction in reported crimes during March, simultaneous with sharp economic downturn and heightened social distancing restrictions. We also decompose trends by crime type and location. Our key findings are:

- Since the steep 20% crime drop in March, overall rates have steadily risen but remain below pre-pandemic levels on average.
- Crimes committed in commercial and street settings (as opposed to residential areas) account for most of the drop in crimes.
- Violent crimes decline in similar proportion to nonviolent crimes.
- Though larcenies fall by one-third, other kinds of theft like burglary and auto theft rise.

Caveats to our findings include the possibility of simultaneous changes in reporting and policing activities.

*Zara Contractor and Ryan Haygood are the primary authors of this report. We are grateful to the Cowles Foundation and the Tobin Center for Economic Policy at Yale University for funding. Mistakes and opinions are our responsibility.

¹Crime reports tend to spike on Jan 1 but inconsistently depending on whether we see the date reported or the date occurred, which differs by city. Therefore we start our analysis aggregating cities on Jan 2

2 Introduction

Hardly a single sector of economic or public life has escaped disruption by Covid-19 and the subsequent policy response. Criminal activity is among the more important trends likely to see movement as a result of the pandemic, yet *a priori* the direction of this effect is unclear. On one hand, a vast literature documents the relationship between property crimes and the business cycle: every 1% increase in unemployment is thought to generate a 1% increase² in property crimes. As unemployment jumped from 4.4% to 14.7% between March and April,³ this particular mechanism of the pandemic's economic impact could boost property crimes significantly.

On the other hand, reduced footfall in public spaces presents fewer victims and opportunities for criminal activity. During the Spanish Flu of 1918, at the peak of Chicago's social distancing measures, which included cessation of all non-critical public gatherings, crime rates declined some 43%.⁴ Thus, although business closures and layoffs may motivate additional property crimes, by the same token these closures reduce the supply of criminal opportunities.

In principle, then, Covid-19's overall effect on crime rates is ambiguous. Given also that many changes in the economy, society, and public policy occurred more or less simultaneously, disentangling the mechanisms by which the pandemic impacted crime is difficult. We abstract from these mechanisms and simply document fluctuations in crime rates over time, focusing on the month of March, when lockdowns took effect and business activity plummeted.

We find that reported crimes dramatically dropped off in several large U.S. cities in mid-March, when most serious social distancing and lockdown measures took effect, and when businesses began to rapidly shut down and lay off workers.⁵ Reported crimes across six U.S. cities dropped by about 20%, with Chicago, Philadelphia, and New York City seeing more precipitous declines than others.

Shocks to crime rates also differed by location, with residential crimes remaining relatively static compared to those committed in commercial and street settings. Though violent and nonviolent crime rates behaved similarly, larceny was the only kind of theft to decline substantially, dropping by about one-third. Burglaries and auto thefts, on the other hand, increased in March.

Given recent reports of sharp increases in calls to domestic violence hotlines in March,⁶ we also attempted to analyze trends in reported domestic violence incidents. However, our data is not suited to this; for most cities we do not have domestic violence as a variable, and where we do, the number of reported cases is likely much lower than actual incidents. For LA, Chicago, and Denver, we see noisy domestic violence data with no clear trend. We suspect this is due to increased difficulty in reporting domestic violence incidents.

²Levitt, Steven D. (2004) <https://www.aeaweb.org/articles?id=10.1257/089533004773563485>

³Bureau of Labor Statistics <https://data.bls.gov/timeseries/LNS14000000>

⁴Milsten, Andrew <https://www.acep.org/how-we-serve/sections/disaster-medicine/news/april-2018/1918-influenza-pandemic-a-united-states-timeline/>

⁵Altonji, Joseph, et al. (2020) <https://tobin.yale.edu/sites/default/files/files/Tobin%20Center%20Report%20on%20Employment%20and%20Hours%20in%20Small%20Businesses%20Report%20final.pdf>

⁶https://laist.com/2020/04/17/coronavirus_la_domestic_violence_hotline_shelters.php

3 Data and Sources of Bias

We compile our dataset from publicly available city-level crime data. In selecting cities, we prioritize the largest U.S. cities with daily, incident-level crime data and information on crime type.⁷ Currently, our main sample includes LA, Chicago, Denver, Seattle and Philadelphia, from January to the end of May.⁸ We separately show results for New York City, where data is available until the end of March. Using incident-level data from each city, we construct trends for total reported crime as well as trends disaggregated by type and location.

An important caveat is that cities report crimes in different ways. We have constructed crime categories to be as uniform as possible, but we cannot guarantee that they are identical across cities. Furthermore, a reduction in crime could be caused by a fall in actual crime rates, or by a fall in reporting. The appearance of different trends across crime types might also owe to differential shocks to reporting.

In addition, the pandemic may be altering policing behavior: Some police departments have relaxed arrest and citation standards,⁹ while cities like Seattle and New York have been increasing patrols and targeting different crimes.¹⁰ These sources of bias are difficult to quantify in our dataset.

Finally, these results are specific to the cities in our sample and may not accurately represent crime trends across the entire United States.¹¹ In particular, the pandemic may affect rural crime differently than the urban crime we track in this report.¹²

4 Reported crimes fell due to Covid-19

Figure 1 shows that all cities in our sample experience a sharp drop in reported crime rates around the third week of March, though the effect is muted in Seattle and Denver.¹³ Vertical lines mark the beginning of each city’s stay-at-home orders; the timing of the drop in crime usually predates the official lockdown. The magnitude of the fall differs by city, with New York City and Philadelphia seeing a proportionally larger effect.

While we cannot claim that this trend is entirely caused by Covid-19 and associated social distancing measures, this interpretation seems most reasonable. We show that this is not due to seasonality; crime rates were relatively flat year-round in 2019 except for in Chicago and Philadelphia, where rates were *increasing* during these months. Another important observation is that, while reported crime rates initially dropped, these numbers have been increasing in most cities since then; however as seen in the 2019 crime trends, this increase could be due to seasonality.

⁷Some cities in our sample include an incident date and a report date, while others only report one of the two; report and incident dates track closely together for most crimes, however.

⁸We cut off our sample just prior to a spike in reports the weekend after George Floyd’s death on May 25.

⁹<https://www.brennancenter.org/our-work/research-reports/police-responses-covid-19>

¹⁰<https://www.npr.org/2020/05/05/850195412/policing-is-changing-in-the-age-of-social-distancing>

¹¹National data is updated less frequently and the relevant data was not available at the time of creating this report.

¹²<https://www.brookings.edu/blog/order-from-chaos/2020/04/07/how-covid-19-is-changing-law-enforcement-practices->

¹³We calculate the crime rate per person using population data from July 2019 Census data

Figure 2 aggregates the total number of incidents in our main sample (LA, Seattle, Denver, Chicago, and Philadelphia). Here, we see a similar trend: a fall in the number of reported incidents in March, with an increasing trend afterwards. From here on, we show main results with aggregated data, as most results are qualitatively similar across cities.

Figure 1:

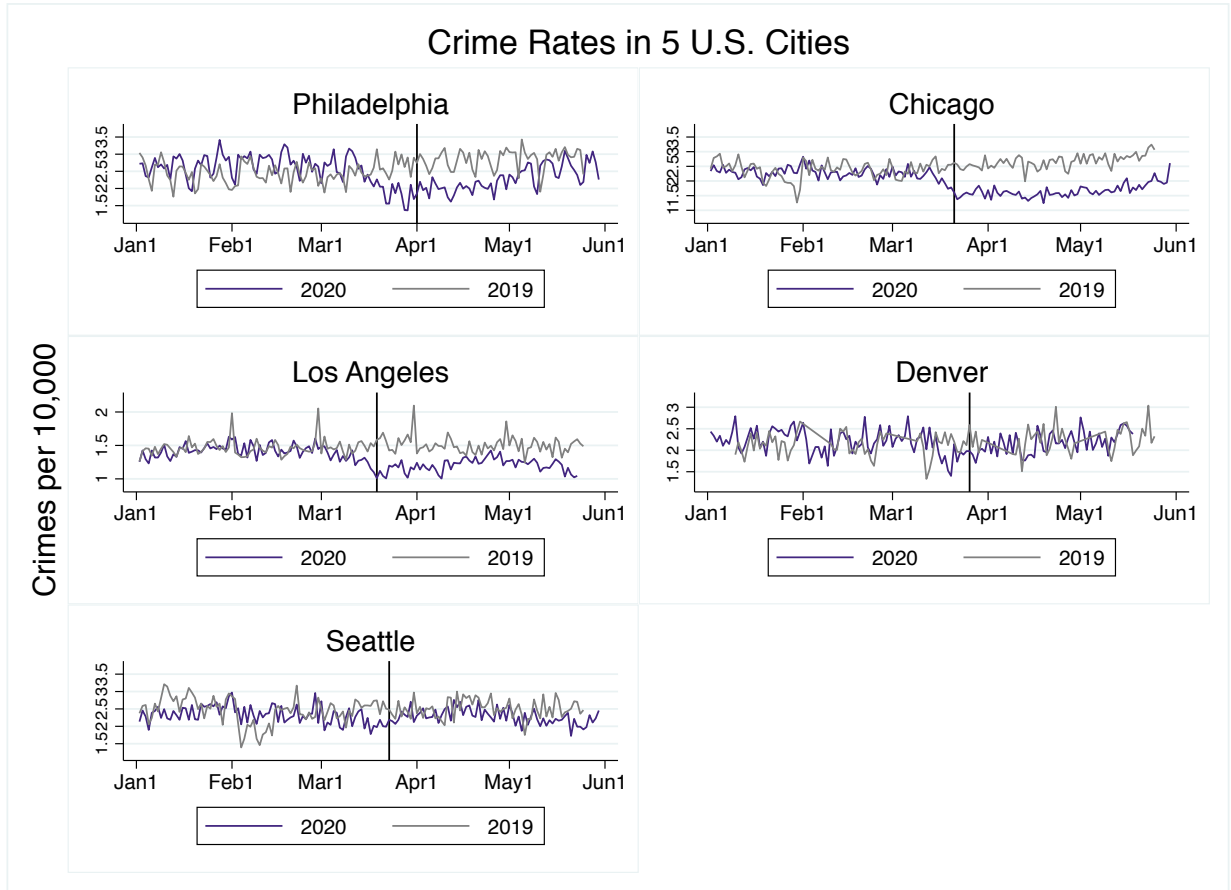
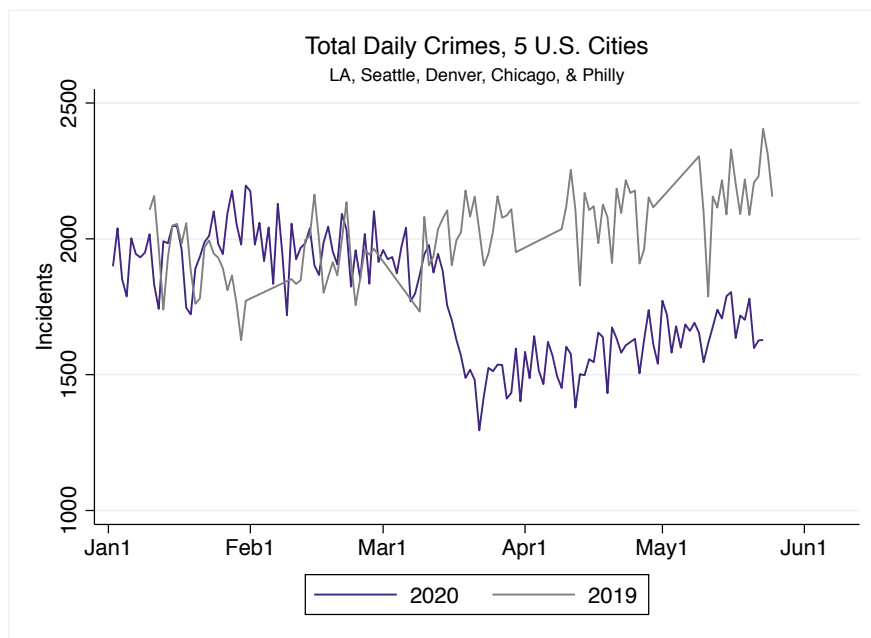


Figure 2:



5 Effects by type of crime

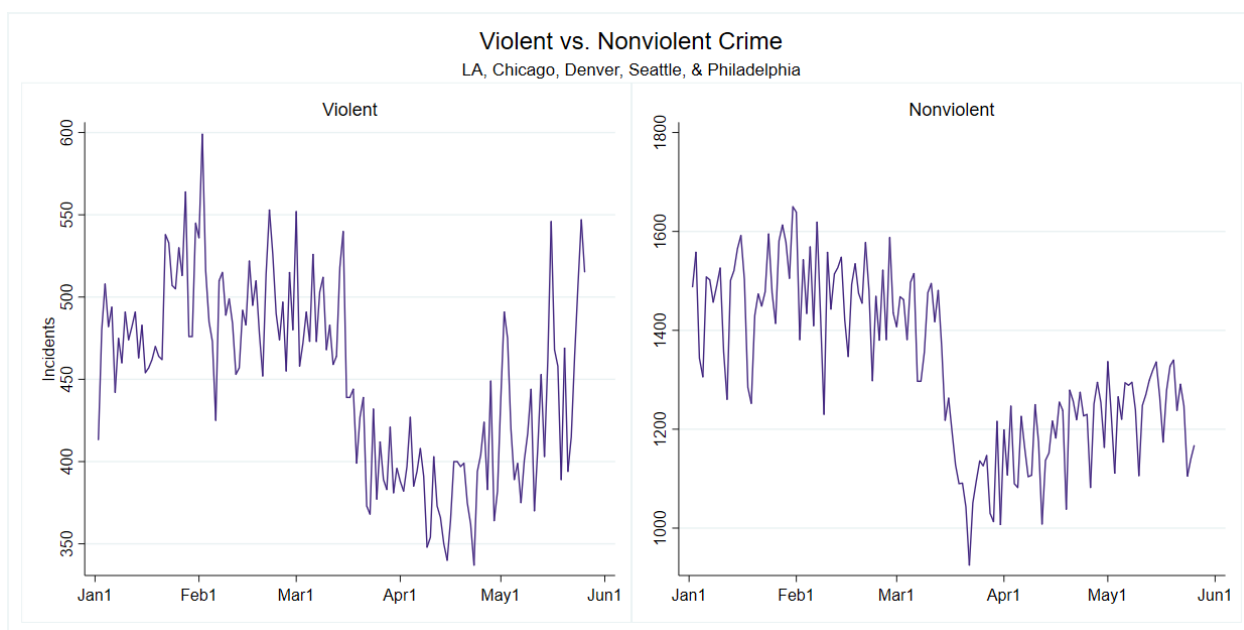
The drop and mild rebound in the overall crime rate conceals some heterogeneity across crime types. As even the disaggregated trends are similar across cities, we aggregate incidents across our main sample.

5.1 Violent Crime

Violent crime, which includes offenses like homicide, robbery, and assault, declines similarly to nonviolent crime in proportion (Figure 3). Since violent crime comprises about one-quarter of all crime, it contributes less to the Covid-19 shock in absolute terms.

Whereas nonviolent crime bottoms out in March before slowly rebounding in April and May, violent crime hits its trough later in April and only starts increasing in May. That said, daily violent crime is somewhat noisy, and the two trends are broadly similar.

Figure 3:



5.2 Theft

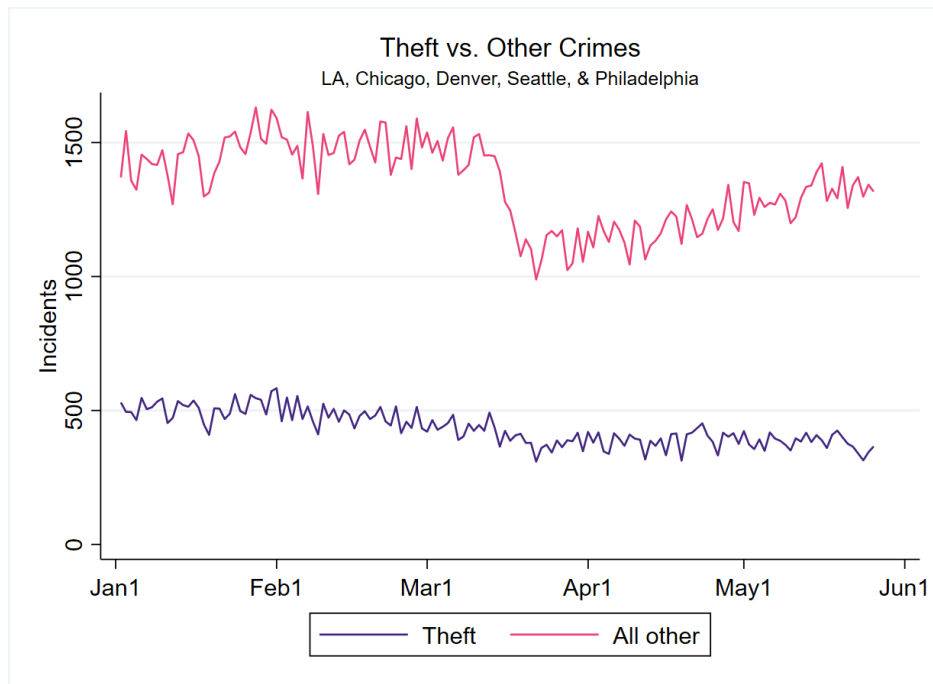
Theft primarily consists of burglary, robbery, larceny, and auto theft, which together comprise some 25% of all crimes.¹⁴ Taken as a whole, theft experiences only a mild dip when most lockdowns started in mid-March, and it continues relatively flat thereafter, unlike other crimes which have rebounded since (Figure 4).

¹⁴In general, larceny is taking another's property without consent. If accompanied by force, it becomes robbery. Burglary is illegally entering a building with intent to commit a crime inside. <https://www.nolo.com/dictionary>

Under the surface of this relatively flat trend, however, Figure 5 reveals large movement: larceny declines by about one-third during March and fails to rebound, whereas burglary and auto theft jump somewhat in mid-March. Robberies are few in number but decline slightly if anything. Interestingly, empirical evidence from Europe suggests that unemployment increases burglaries and auto thefts proportionally more than larcenies,¹⁵ which accords with the relative dynamics observed here.

Figure 6 highlights this distinction within thefts, plotting larceny against all other thefts. As lockdowns take effect and unemployment increases, larceny declines sharply, but other types of theft do not show any clear change.

Figure 4:



¹⁵Altindag, Duha T. (2012) <https://www.sciencedirect.com/science/article/pii/S0144818811000652>

Figure 5:

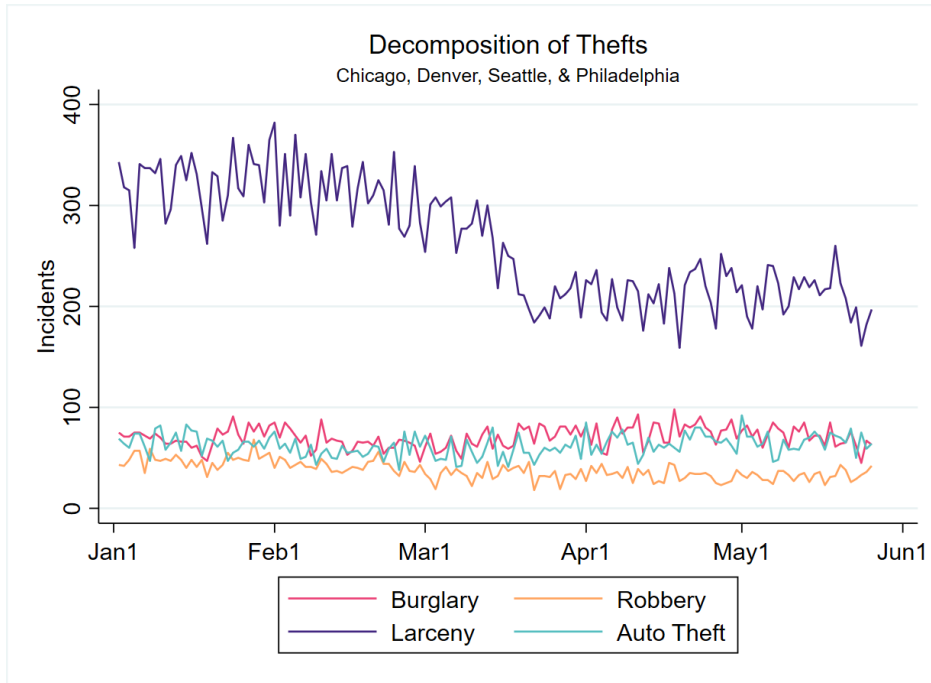
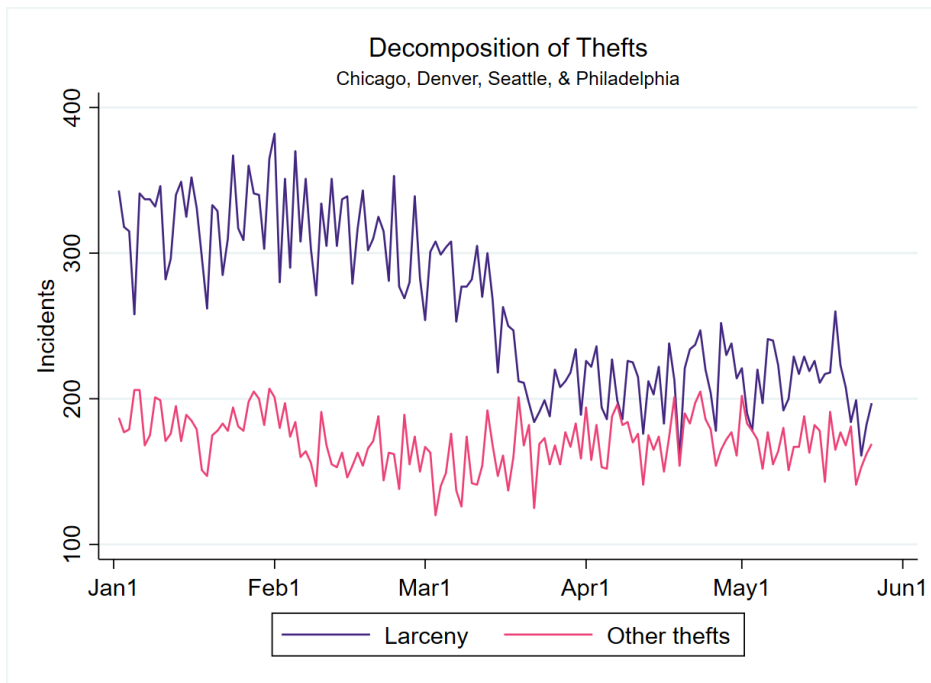


Figure 6:



6 Effects by location

Of the cities reviewed, only LA and Chicago include a description of the premises where crimes occur. Grouping premise descriptions into commercial, residential, and street categories, we again observe similar qualitative patterns between cities and here display combined results.

Looking first at total crime, Figure 7 documents substantial drops (about 25%) in commercial and street locations in mid-March, whereas crimes committed in residence or residential areas hardly dip at all. This pattern is consistent with the nature of lockdowns, which force people into homes and away from the businesses where they may work or shop.

Notably, street crimes rebound quite sharply in April and May to approach pre-lockdown levels. This is not the case for crimes committed in commercial settings, which remain at about 75% of pre-lockdown levels even through May.

Figure 8 displays this decomposition by location for violent crimes. Similar trends hold, though the data are somewhat noisier at this level.

Finally, Figure 9 shows that thefts decline most in commercial settings, though street and residential thefts do drop mildly.

Figure 7:

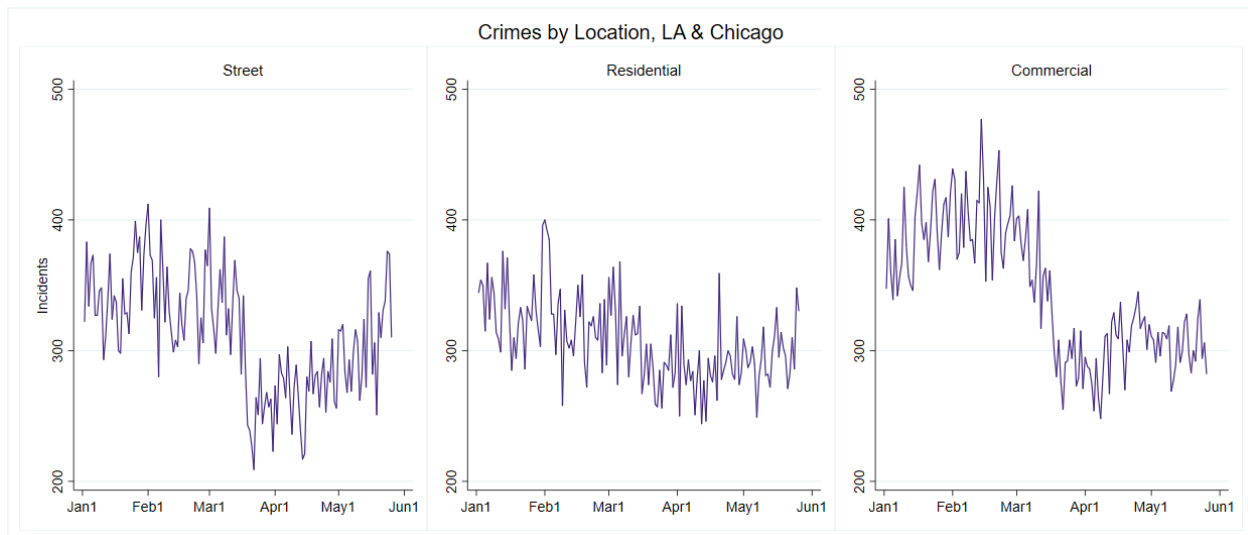


Figure 8:

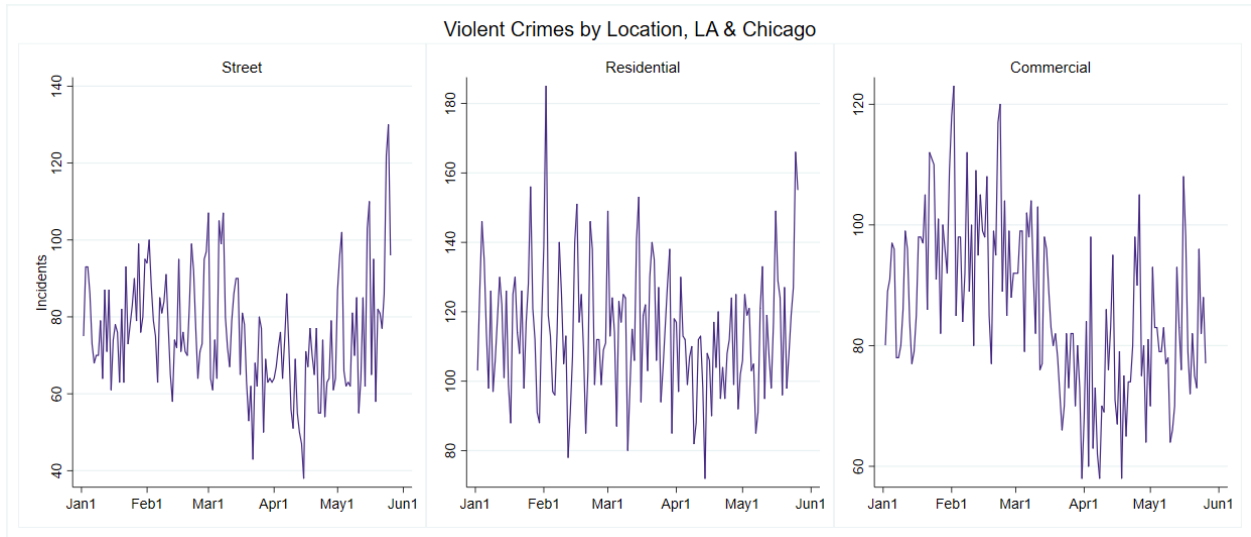
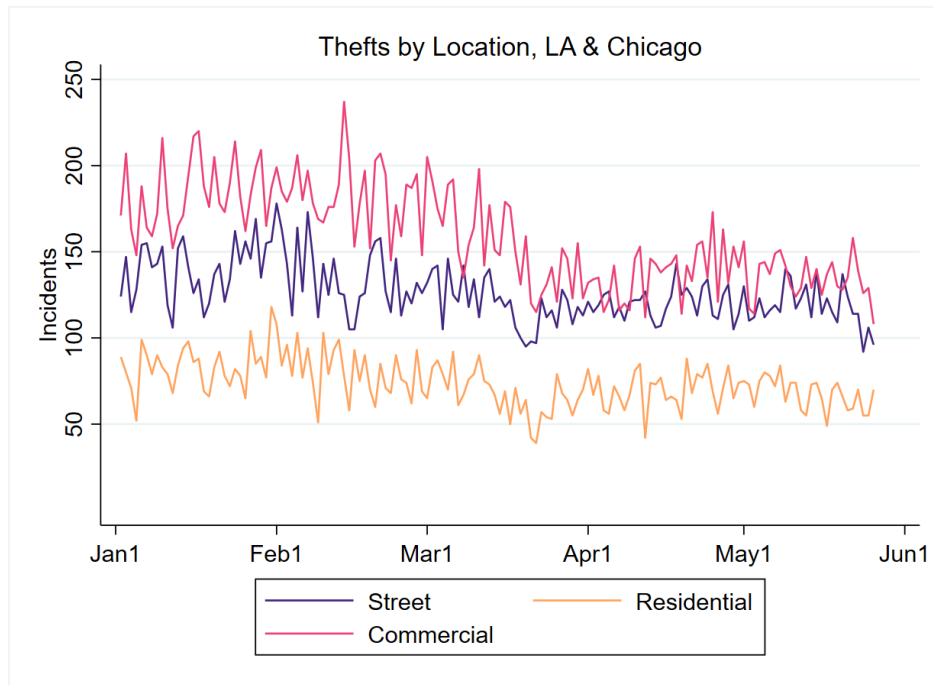


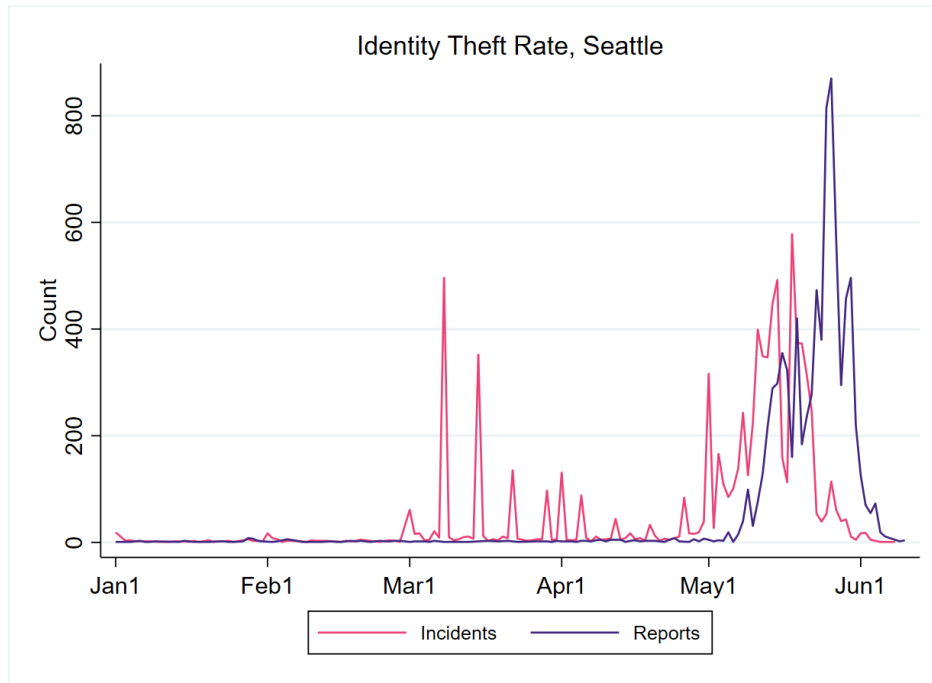
Figure 9:



7 Identity Theft

As seen in Figure 10, there have recently been a large number of reports of identity theft in Seattle.¹⁶ This is due to unemployment insurance fraud in Washington state on the order of hundreds of millions of dollars.¹⁷

Figure 10:



8 New York

We report trends for New York separately because data is currently available only up to the end of March.

We see that the number of reported incidents fell in early March, across locations. However, the drop was larger in commercial areas and street settings than in residences (Figure 11). This is also true when considering only violent crimes (Figure 12); in fact, there is no discernible trend for violent crimes occurring in residences.

¹⁶We leave out identity thefts in other trends for Seattle; otherwise, the trend in total crime would have been driven by identity theft

¹⁷<https://www.seattletimes.com/business/economy/new-weekly-jobless-claims-in-washington-fall-sharply-in-wake-of->

Figure 11:

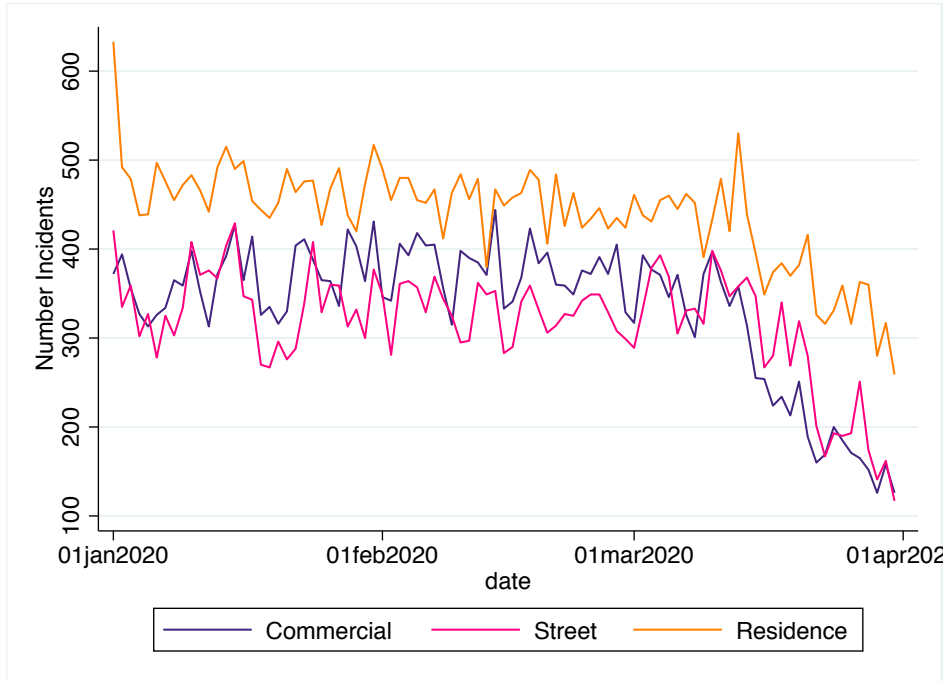
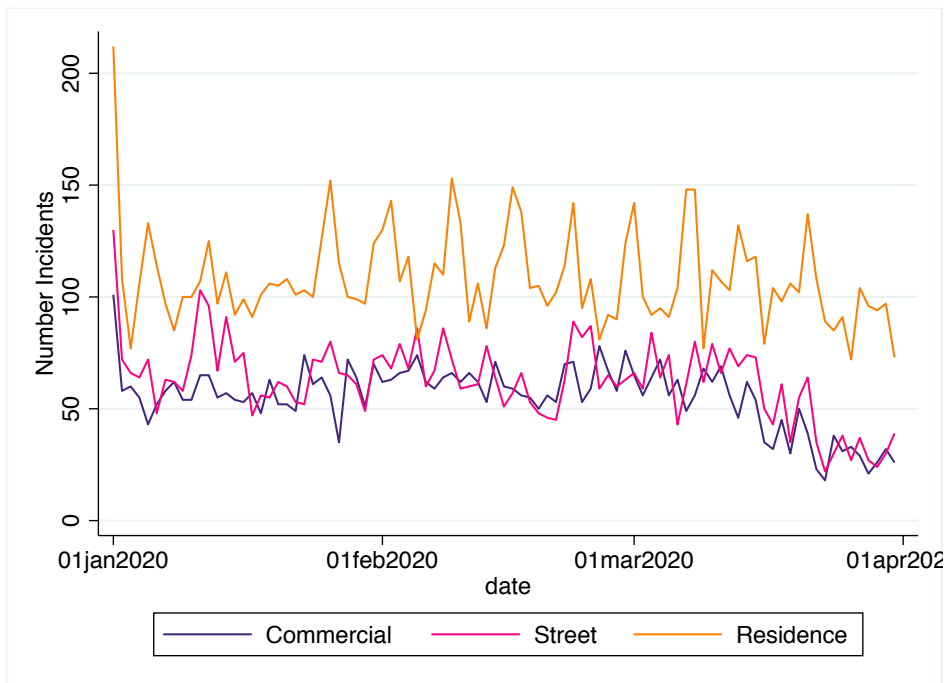


Figure 12:



Turning to theft, the fall in the number of thefts in New York is driven almost entirely by commercial areas, which have the highest levels of reported incidents (Figure 13). As in

other cities, the fall in thefts is through larceny rather than robbery or burglary (Figure 14). The effect is proportionally similar when considering grand versus petit larceny.¹⁸

Figure 13:

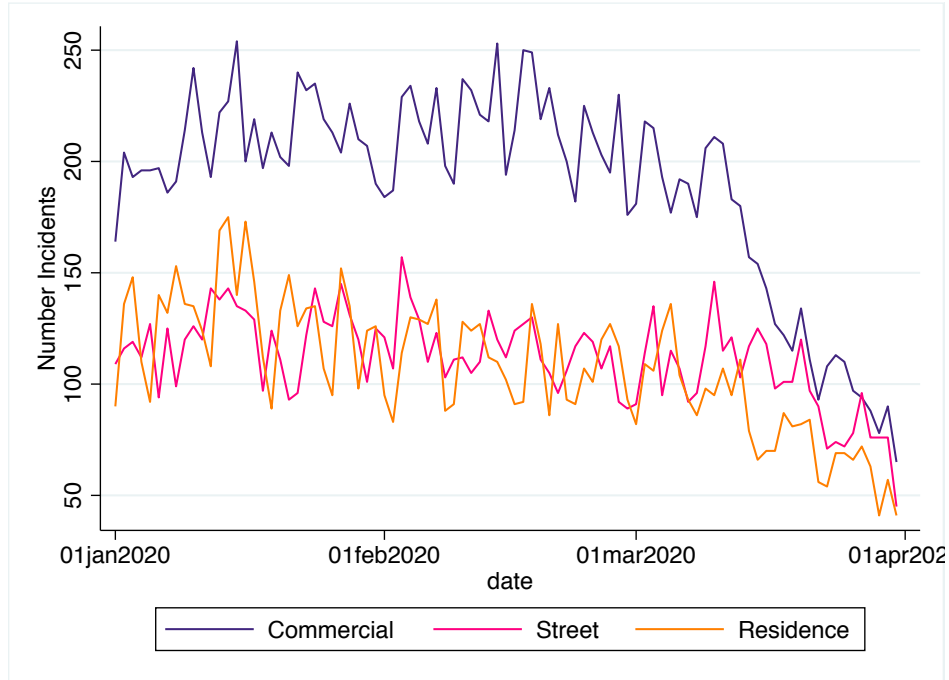
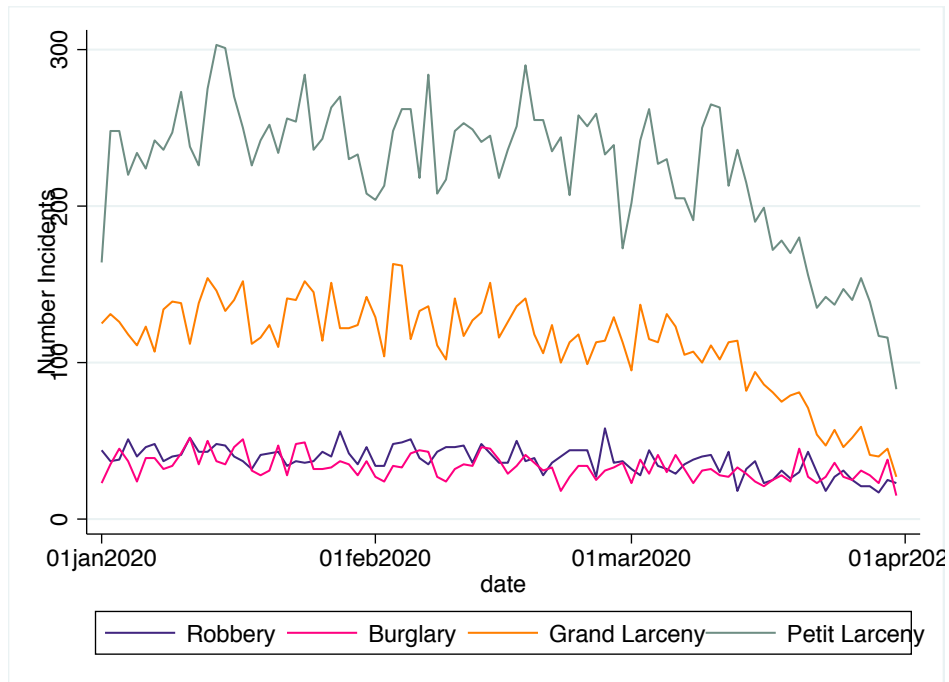


Figure 14:



¹⁸In New York, theft less than \$1000 is classified as petit larceny

9 Closing Remarks

Altogether, Covid-19 has substantially reduced reported crimes across several major U.S. cities, although some cities and crime types have been influenced less than others. Though crime rates quickly began to rebound following their March drop-off, as of the end of May they remain below pre-lockdown levels overall. That crime rates have steadily risen since March may reflect some degree of reopening, but may also owe to crime's natural upward trend in the spring months as the weather warms.

Broadly speaking, we can quite confidently attribute the drop in crimes to Covid-19, but our data do not reveal whether the effect comes primarily through social distancing restrictions or the economic shutdown, or whether voluntary or mandated behavioral changes contributed more to this decline. A flurry of changes in the economy, social conditions, individual attitudes, and public policies largely coincided during March, making it difficult to attribute the drop in crimes to any particular one without further investigation and data collection. That said, most states' mandated lockdowns come on the heels of the drop in crime.

Additionally, one of the main weaknesses of our study is the possibility that Covid-19 also substantially impacted crime reporting. However, at least two trends in the data lead us to believe that our results are driven by reductions in actual crimes, rather than simply changes in reporting. Given that reporting rates for violent crimes are likely less susceptible to variation, the fact that the declines in violent and nonviolent crimes are proportionally similar is somewhat reassuring. Secondly, the fact that commercial and street crimes drive the drop in reported crimes is consistent with the idea that lower footfall in these areas reduces rates of actual crime, not simply reports. The possibility remains, however, that some fraction of the decline in reported crimes owes to reduced reporting.