



COVID19, Alabama Stay-At-Home Measures and Impact on Population Health and Economy in Tuscaloosa and Jefferson Counties

Clearprism Data Science and Visualization Group

COVID19, Alabama Stay-At-Home Measures and Impact on Population Health and Economy in Tuscaloosa and Jefferson Counties

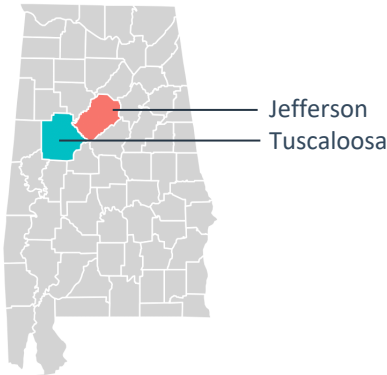


In this deck we show:

- Jefferson and Tuscaloosa county characteristics ([slide 3](#))
- Effect of stay-at-home period on population movement ([slide 4](#))
- COVID19 new case and death trends in relation to stay-at-home period ([slides 5-6](#))
- Link between new cases and reproductive number of COVID19 in relation to stay-at-home ([slide 7](#))
- COVID19 Impact on the Economy
 - Employment ([slide 8](#))
 - Earnings ([slide 9](#))
 - Job Postings ([slide 10](#))
- Summary of findings ([slide 11](#))

Jefferson and Tuscaloosa County Characteristics

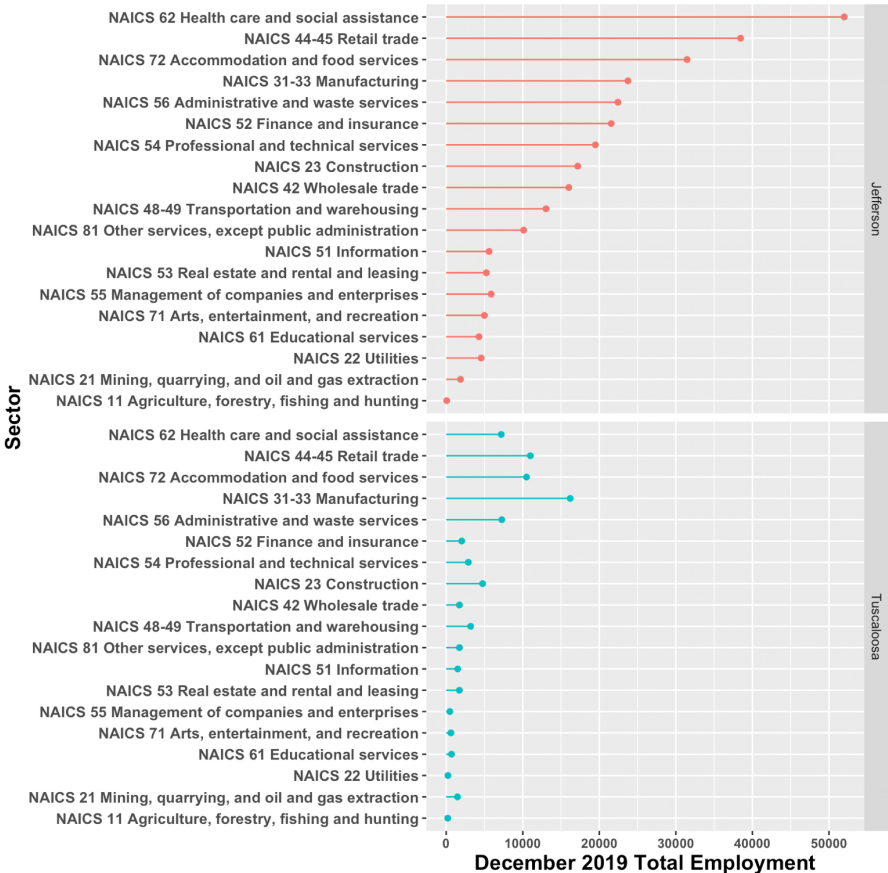
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	Jefferson	Tuscaloosa
Population	658,573	209,355
Population Density	592 persons per sq mi	158 persons per sq mi
ICU Beds	471	84
Percent in Poverty	16%	16%

Employment Profile, pre-COVID19

Bureau of Labor Statistics, <https://www.bls.gov/cew/>



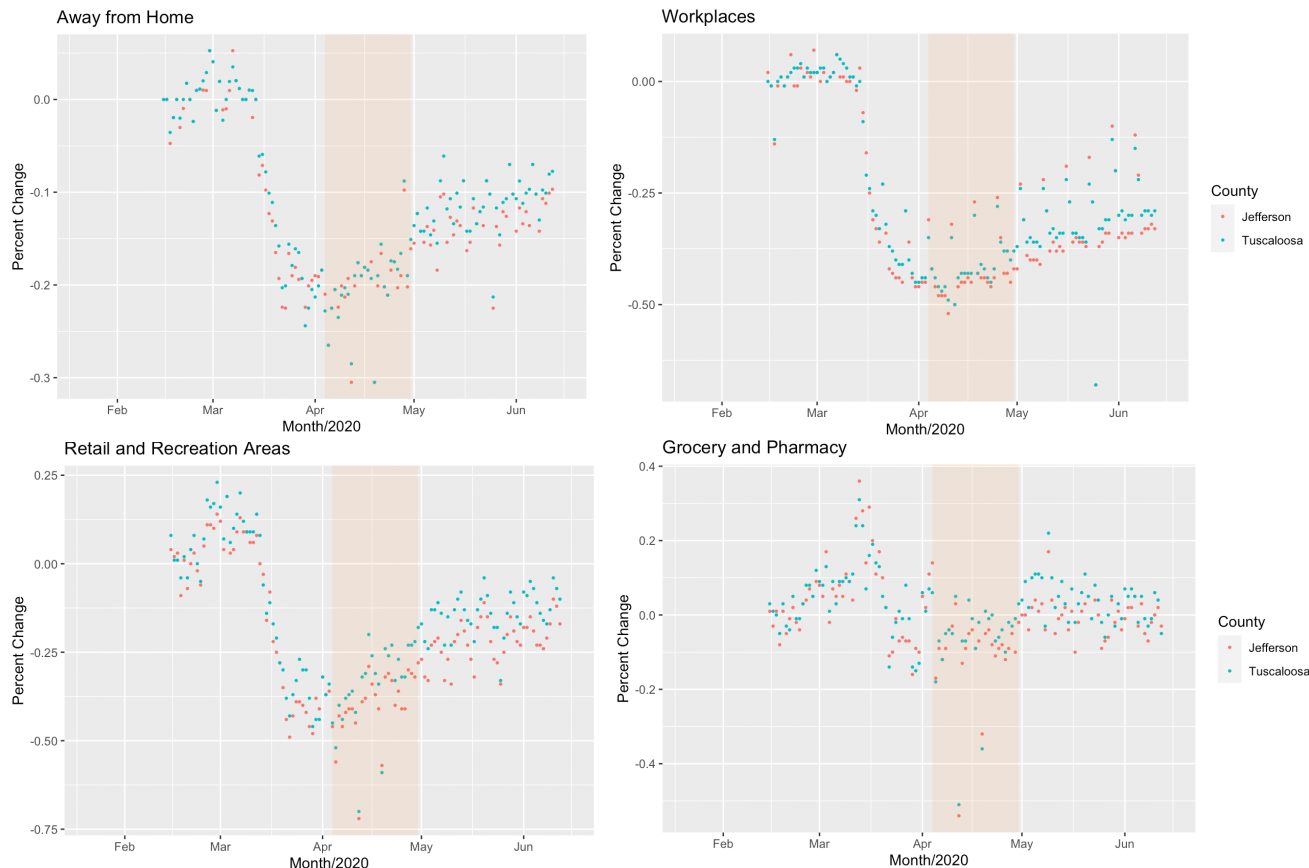
Effect of Stay At Home Orders on Population Movement



Stay at home orders were put in place 4/4 through 4/30/2020 in Alabama, indicated by the vertical light orange band on the charts. The charts show percent change in population movement calculated from Google Mobility Insights data (<https://www.google.com/covid19/mobility/>)*

The population in both counties initially remained at home but gradually made trips away from home to workplaces and retail and recreation areas. There was actually little change in trips to grocery and pharmacy despite the order.

* Data were compiled and made downloadable by <https://trackthecorecovery.org/>

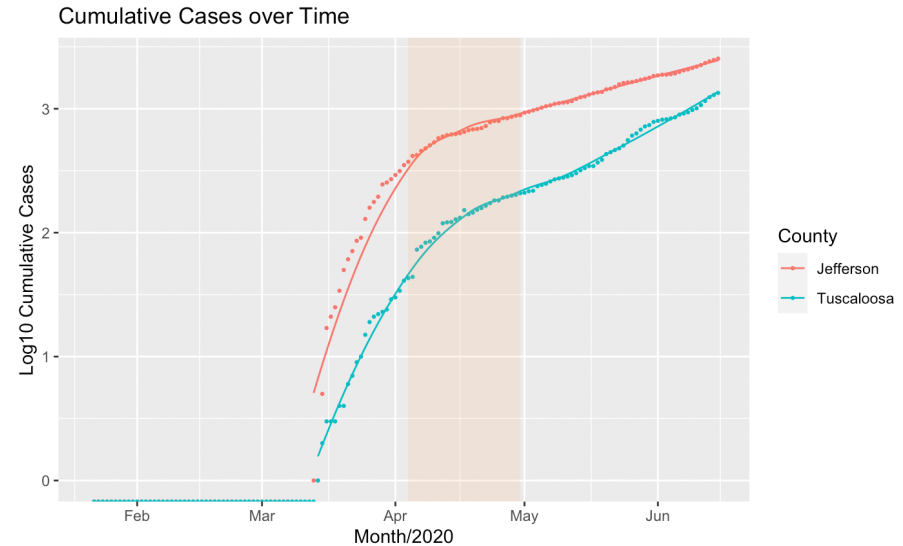
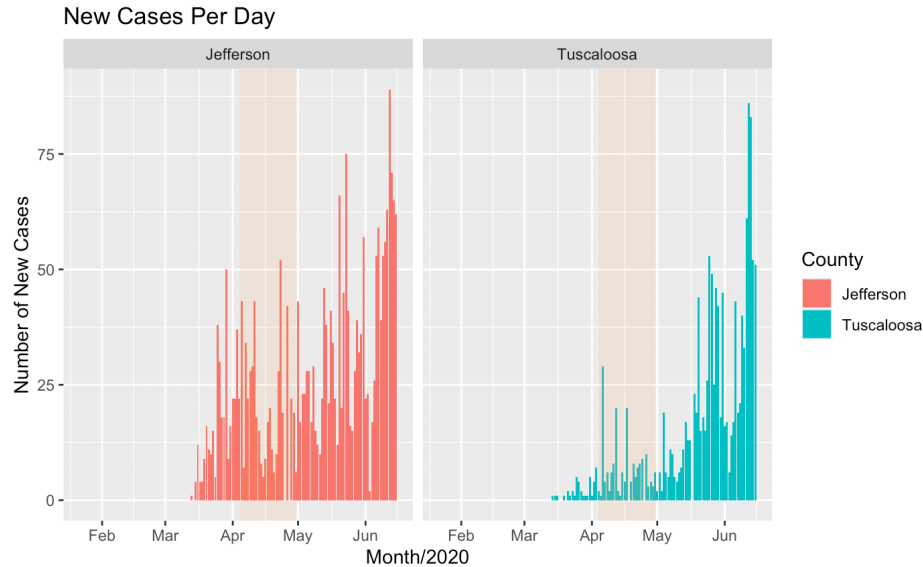


COVID19 Cases over Time in Jefferson and Tuscaloosa Counties



Once stay-at-home order were lifted new cases continued to appear in both counties and trended upward through June in both counties.

The cumulative number of cases were still on an upward trajectory and had not yet “flattened” in the two counties when stay-at-home orders were lifted.

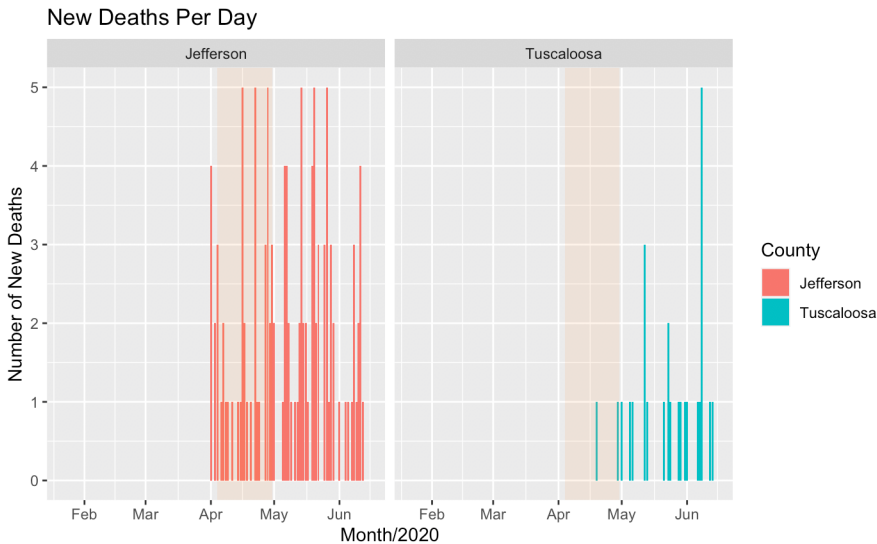


Source: [2019 Novel Coronavirus COVID-19 \(2019-nCoV\) Data Repository by Johns Hopkins CSSE](#)

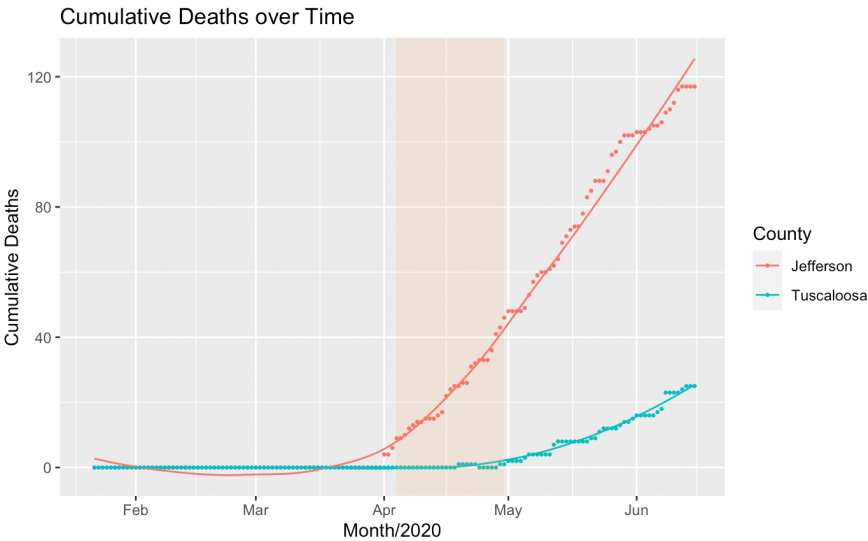
COVID19 Deaths over Time in Jefferson and Tuscaloosa Counties

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Jefferson County had more deaths per day than Tuscaloosa.



Jefferson has had a steeper rise in deaths than Tuscaloosa



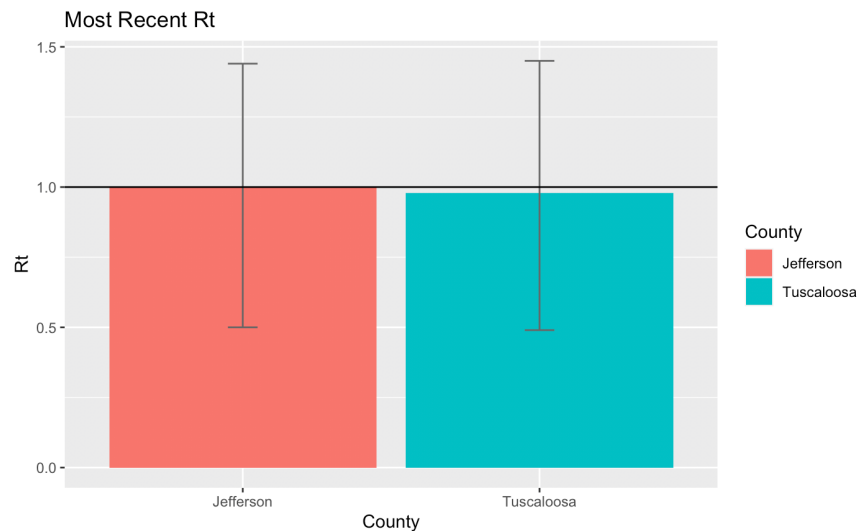
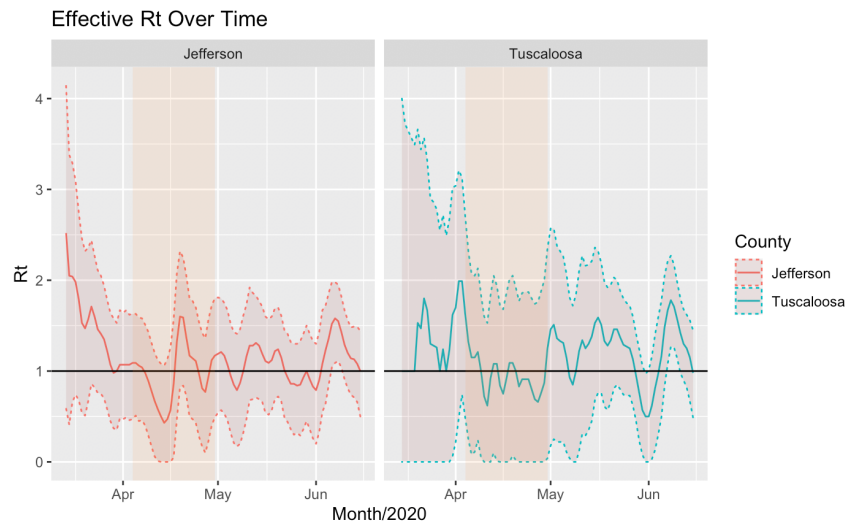
Source: [2019 Novel Coronavirus COVID-19 \(2019-nCoV\) Data Repository by Johns Hopkins CSSE](#)

COVID19 Effective Reproductive Number $R(t)$ over Time in Jefferson and Tuscaloosa Counties

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To understand the rise in cases, it helps to understand the effective reproductive number or $R(t)$. $R(t)$ is the expected number of susceptible individuals that could get infected by one case. An $R(t)$ greater than or equal to one indicates continued potential for spread of COVID19. In fact, the upper limit of the estimated $R(t)$ ideally should be less than 1 for some time before reopening. This figure shows the $R(t)$ over time in each county. The upper limit of the $R(t)$ estimate was still well over 1 when stay-at-home orders were lifted.

As of June 15, all three counties still had potential for new COVID19 cases based on $R(t)$

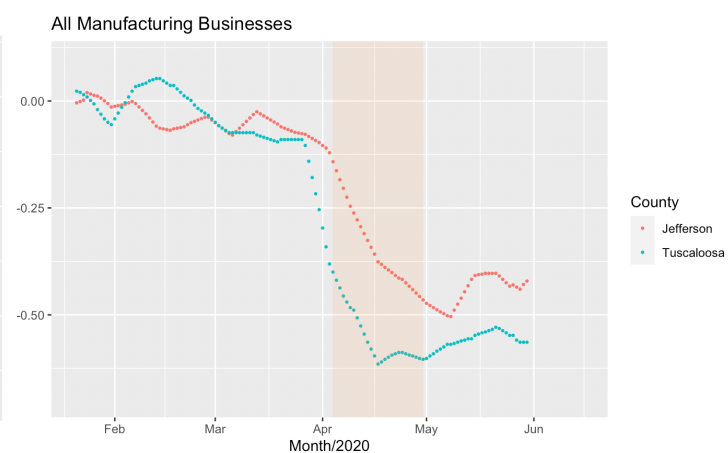
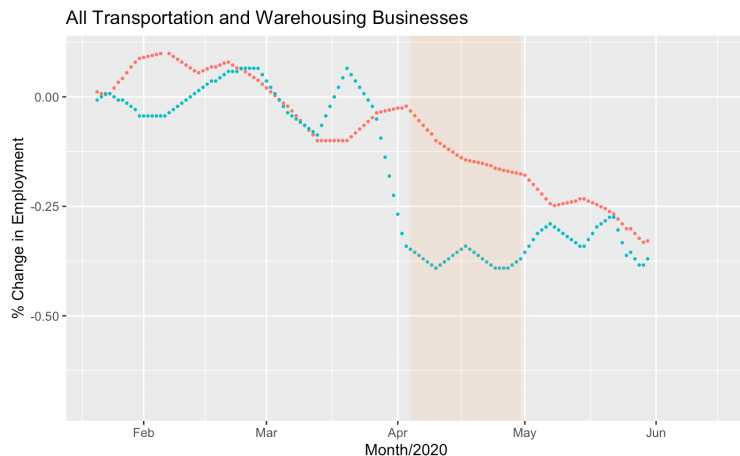
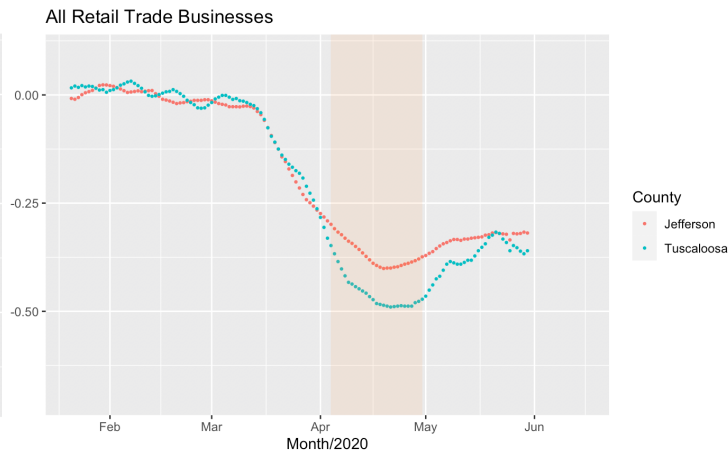
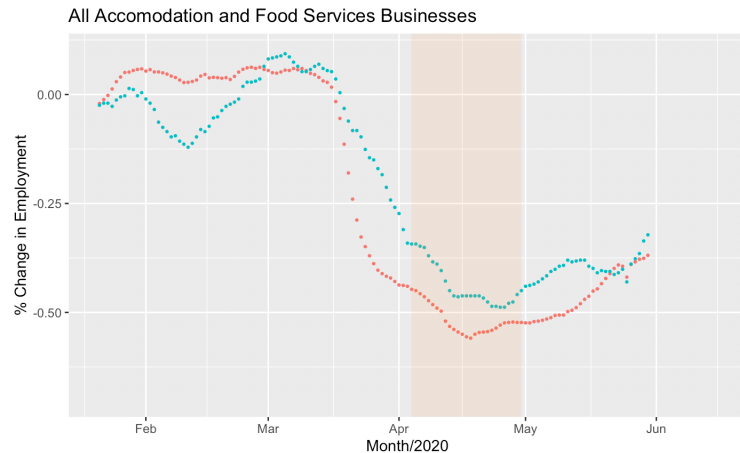


COVID19 Impact on Low Income Employment in Jefferson and Tuscaloosa Counties

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Job loss among low-income workers was worst in the Accommodation and Food Services and Manufacturing sectors, dropping nearly 50% at the trough. Jefferson County fared worse in Accommodation and Food services sector than Tuscaloosa. Tuscaloosa fared worse in Retail Trade, Transportation and Warehousing, and Manufacturing.

Data were compiled and made downloadable by <https://tracktherecovery.org/>



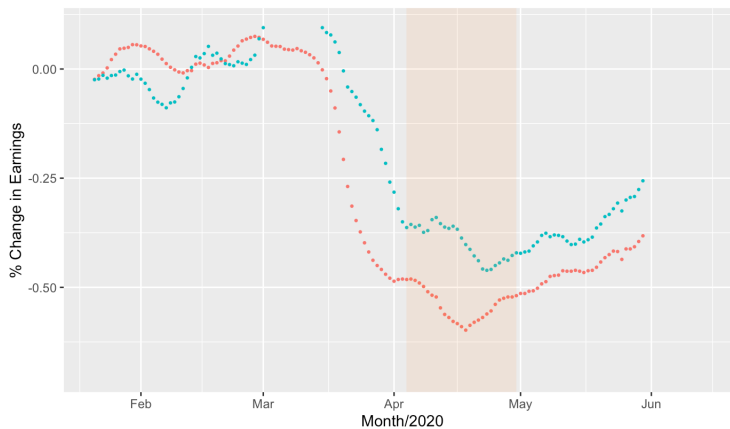
COVID19 Impact on Low Income Earnings in Jefferson and Tuscaloosa Counties



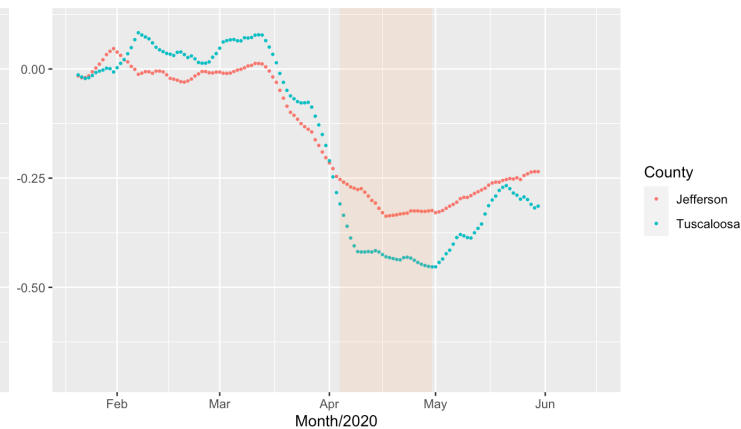
Concomitant with employment, the percent reduction in earnings among low-income workers was worst in the Accommodation and Food Services and Manufacturing sectors. Jefferson County fared worse than Tuscaloosa in Accommodation and Food Services. Tuscaloosa fared worse in Retail Trade, Transportation and Warehousing, and Manufacturing.

Data were compiled and made downloadable by <https://tracktherecovery.org/>

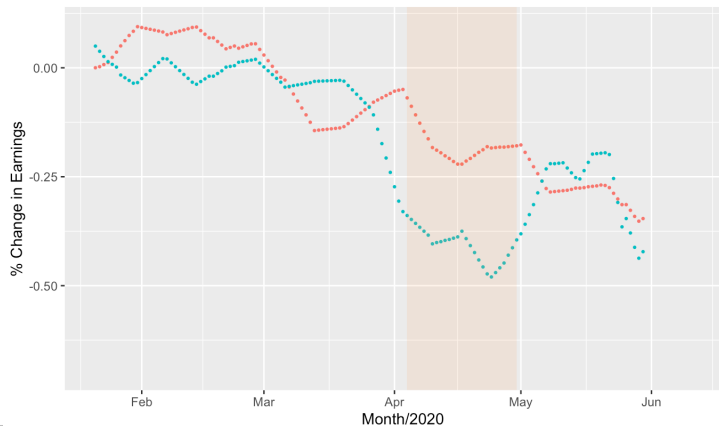
All Accommodation and Food Services Businesses



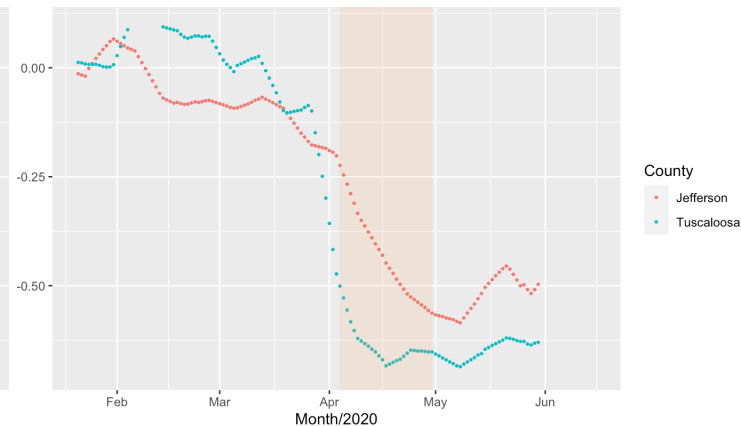
All Retail Trade Businesses



All Transportation and Warehousing Businesses



All Manufacturing Businesses



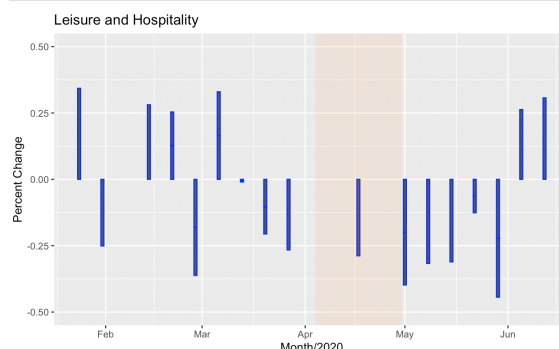
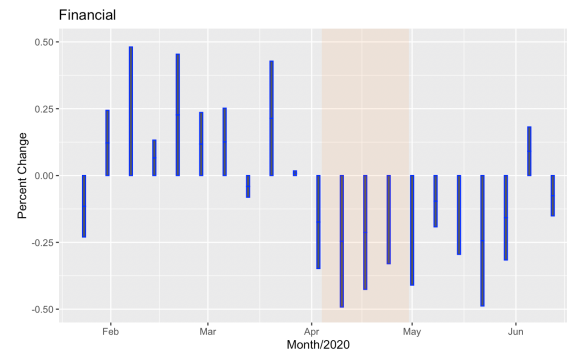
County
Jefferson
Tuscaloosa

County
Jefferson
Tuscaloosa

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The figure consists of three bar charts, each representing a different economic sector: Manufacturing, Professional and Business Services, and Financial. Each chart displays the percent change in activity from February to June 2020. A shaded orange region in each chart indicates the period from April 15 to May 15, 2020, which corresponds to the period of the data provided in the table. The y-axis for all charts ranges from -50 to 50 percent change.

- Manufacturing:** Shows a significant decline in activity starting in April, reaching a low of approximately -50% in mid-April, followed by a gradual recovery to around -25% by June.
- Professional and Business Services:** Shows a sharp decline in activity starting in April, reaching a low of approximately -40% in mid-April, followed by a gradual recovery to around -10% by June.
- Financial:** Shows a sharp decline in activity starting in April, reaching a low of approximately -50% in mid-April, followed by a gradual recovery to around -10% by June.



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Summary of Findings

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- Despite stay-at-home measures the population gradually made trips outside the home even during the stay-at-home period
- New cases and deaths increased substantially following lifting of stay-at-home
- The reproductive rate of COVID19 was still above 1, indicating potential for continued disease spread, upon lifting of stay-at-home
- All economic sectors analyzed saw nearly a 50% drop in earnings and employment
- Recovery appears to be slowest in manufacturing