Methods and Sources

The following is a broad summary of how we examined the impact of COVID-19-related job losses on the region.

1. First, we developed estimated rates of job loss for different combinations of industries and occupations.
   a. The economic sector someone works in is their industry, and the specific kind of work they do is their occupation. Someone who cleans and/or maintains buildings (occupation) could work in different sectors (industries)—construction, hospitality and food service, health care, or others.
   b. We calculated these from the U.S. Census Bureau’s Current Population Survey (CPS) data for the entire United States in April 2020. This dataset shows which workers have lost their jobs in the past two months.
   c. The specific industry groups we used can be viewed on the Census Bureau’s website (https://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2017)

2. Second, we simulated job losses by assigning a “COVID job loss” status to each worker in American Community Survey (ACS) microdata. This status is based primarily on the job-loss rate for their industry and occupation (from #1), but also includes adjustments to align our estimates with unemployment insurance filings data from the Minnesota Department of Employment and Economic Development (DEED).
   a. We started by assigning “COVID job losses” randomly within industries and occupations. That is, if a certain industry-occupation combination had an estimated job-loss rate of 30%, and there were 100 workers in the ACS PUMS with that industry-occupation combination, then 30 of them, selected at random, would end up with a “COVID job loss.”
   b. For some occupations, the resulting number of newly unemployed workers was lower than the number of unemployment insurance filings reported by the Minnesota Department of Employment and Economic Development (DEED). We increased the estimated job-loss rates for those occupations accordingly.
   c. We then examined the estimated number of newly unemployed workers by race and ethnicity, and we found that our simulation produced fewer unemployed workers of color than the number of unemployment insurance filings by workers of color. (Evidently, workers of color are more likely to lose their job than White workers in the same general industry and occupation.) We therefore made one final adjustment to increase estimated job-loss rates for workers of color.

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1 The U.S. Census Bureau’s Current Population Survey (CPS) has information on job losses through the second week of April 2018. It does not have a large-enough sample to estimate the impacts of job losses in the Twin Cities region, however.

2 The U.S. Census Bureau’s American Community Survey (ACS) Public Use Microdata Sample (PUMS) is a rich source of information on work, incomes, and housing costs, with a large-enough sample of workers in the Twin Cities region to estimate the impacts of job losses for many different groups. It is not current enough to provide any data on job losses, though. (The most recent data available is for 2018.)
3. Third, we simulated the effect of these job losses by subtracting earned income from each newly unemployed worker’s income, and then calculating new household and family incomes. We did this under 24 scenarios:
   a. Business closures (and resulting job losses) ranging from 1 to 12 months in length
   b. With and without the assistance provided by the federal stimulus, also known as the Coronavirus Aid, Relief, and Economic Security (CARES) Act:
      i. Cash payments to individuals ($1,200) and married couples ($2,400), with an additional $500 for each child. These benefits are reduced for people with incomes above $75,000 (single people with no children), $112,500 (single people with children), or $150,000 (married couples).
      ii. Federal Pandemic Unemployment Compensation (an extra $600/week for all unemployed people through July 2020)
      iii. Pandemic Unemployment Assistance (federally funded benefits for unemployed people ineligible for state benefits through December 2020)
      iv. Pandemic Extended Unemployment Compensation (an extra 13 weeks of state unemployment benefits through December 2020)
4. Finally, we calculated new measures of per capita income, poverty, and housing cost burden from these revised household and family incomes rates under each scenario, along with breakdowns by race/ethnicity, cultural groups, “pre-pandemic” household income ranks, tenure, industry, and occupation.
5. To avoid the possibility that any one random assignment of job losses to our sample of workers would produce unrepresentative results, we repeated the above calculations 50 times and averaged the 50 different results.

We made several decisions that simplified our work while missing some nuances in how the pandemic is playing out. We may address some of these issues in subsequent research.

- We are not examining the impact of federal emergency assistance to businesses themselves, which may affect job-loss rates. These include corporate tax cuts, payments to small businesses to keep workers on payrolls, and other efforts.
- We are examining the effects of the initial wave of business closures alone – through early May 2020 – and not any subsequent layoffs later this year resulting from lost consumer demand.
- We are not assuming that some workers who lose their jobs will find new employment. Nor are we assuming any changes in pay for workers who have not lost their job (whether increased pay among some retail businesses or required unpaid leave spread out over several months).
- We are assuming that the income of self-employed people will not drop below $0, even though they may have business-related rent payments and other bills that might make their net income negative.
- We are assuming that all job losses begin at one time point and end at another time point. In reality, there will not be a single moment at which the business closures end. It is difficult to predict how quickly different industries might reopen, and how much demand there will be for their services when they do.
- We are not estimating the economic impacts of medical emergencies, impaired health or premature deaths of households’ members. These impacts are difficult for us to project, as the impacts would be proportional to the numbers of infection cases, hospitalizations and deaths. Based on available evidence, it is likely that these impacts will disproportionately affect people of color.