

# The U.S. Labor Market during the Beginning of the Pandemic Recession\*

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Preliminary and Evolving

## Abstract

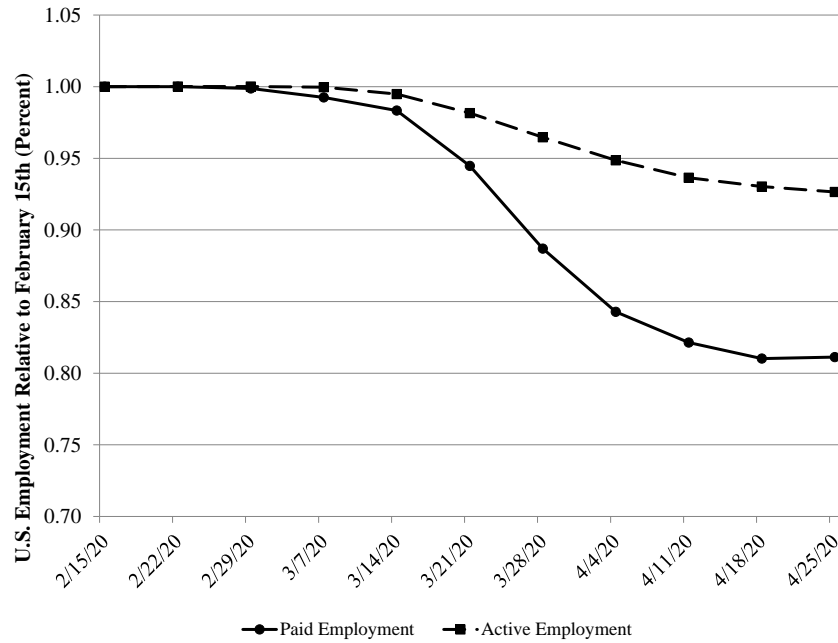
Using weekly, anonymized administrative payroll data from the largest U.S. payroll processing company, we measure the deterioration of the U.S. labor market during the first two months of the global COVID-19 pandemic. We find that U.S. private-sector employment contracted by about 22 percent between mid-February and mid-April. Businesses suspending operations—perhaps temporarily—account for a significant share of employment losses, particularly among smaller businesses. Hours worked for continuing workers fell by 4.5 percent. We highlight large differences in employment declines by industry, business size, state of residence, and demographic group. Workers in the bottom quintile of the wage distribution experienced a 35 percent employment decline while those in the top quintile experienced only a 9 percent decline. Large differences across the wage distribution persist even after conditioning on worker age, business industry, business size, and worker location. As a result, average base wages increased by over 5 percent, though this increase arose entirely through a composition effect. Overall, we document that the speed and magnitude of labor market deterioration during the early parts of the pandemic were unprecedented in the postwar period, particularly for the bottom of the earnings distribution.

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\*We thank Matthew Levin, Mita Goldar, and Sinem Buber from ADP for their support. The views expressed in the paper are the authors' and do not necessarily reflect the views of ADP. Additionally, the analysis and conclusions set forth here are those of the authors and do not indicate concurrence by other members of the research staff or the Board of Governors. Authors' contact information: Tomaz.Cajner@frb.gov, Leland.D.Crane@frb.gov, Ryan.A.Decker@frb.gov, jgrigsby@uchicago.edu, Adrian.B.Hamins-Puertolas@frb.gov, erik.hurst@chicagobooth.edu, Christopher.J.Kurz@frb.gov and ahu.yildirmaz@adp.com

# Appendix A Additional Results

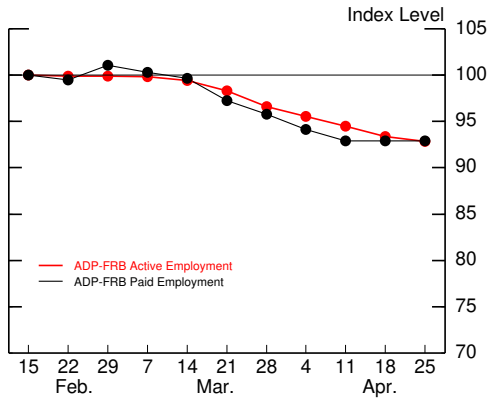
Figure A1: Aggregate Employment Through April 18th: Robustness



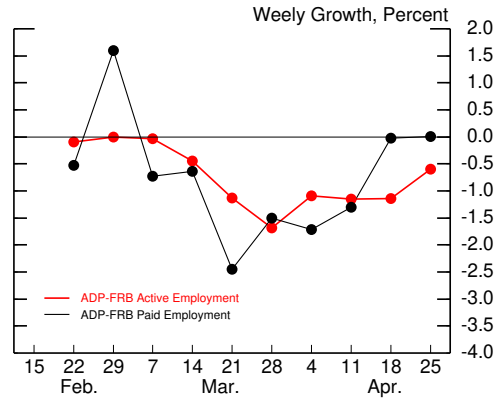
*Notes:* Figure shows the trend in employment within the ADP business-level sample through the April 18th pay periods. Employment changes are relative to February 15th. The solid black line (circles) shows the trend in payroll employment. The dashed black line (squares) shows the trend in active employment. These series based on data purged of outliers, adjusted for predictable revisions, and are seasonally adjusted using the methods of Cleveland and Scott (2007). All trends are weighted such that the ADP sample is representative by business size crossed with 2-digit NAICS industry.

Figure A2: Cumulative and Weekly Employment Change by Sector

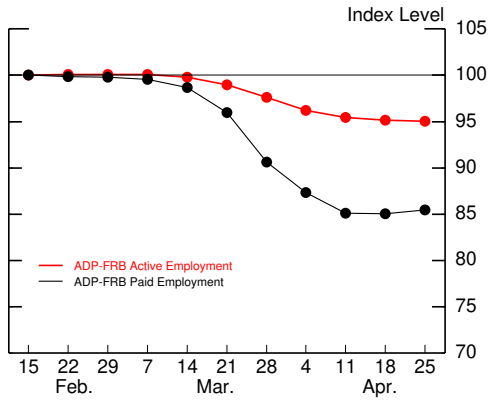
**Mining and Logging**  
Indexed Cumulative Job Loss since 15 Feb 2020



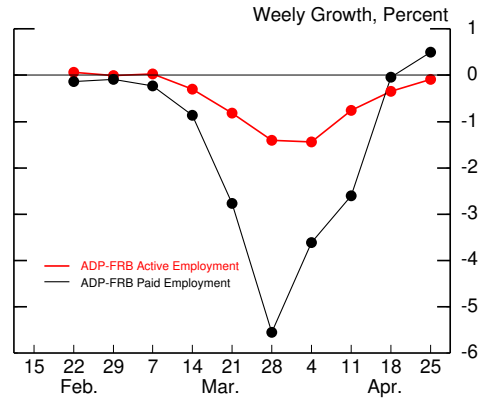
**Mining and Logging**  
ADP FRB Growth Rates



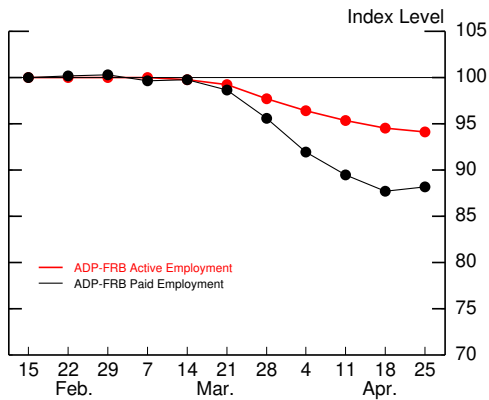
**Construction**  
Indexed Cumulative Job Loss since 15 Feb 2020



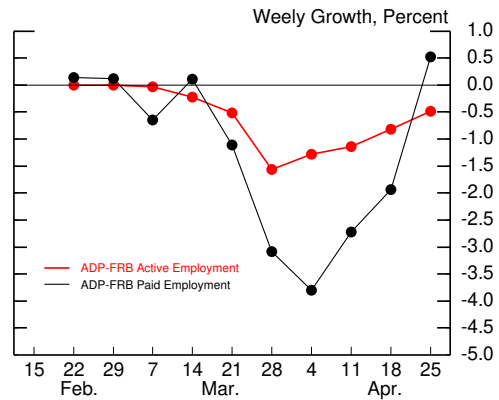
**Construction**  
ADP FRB Growth Rates



**Manufacturing**  
Indexed Cumulative Job Loss since 15 Feb 2020

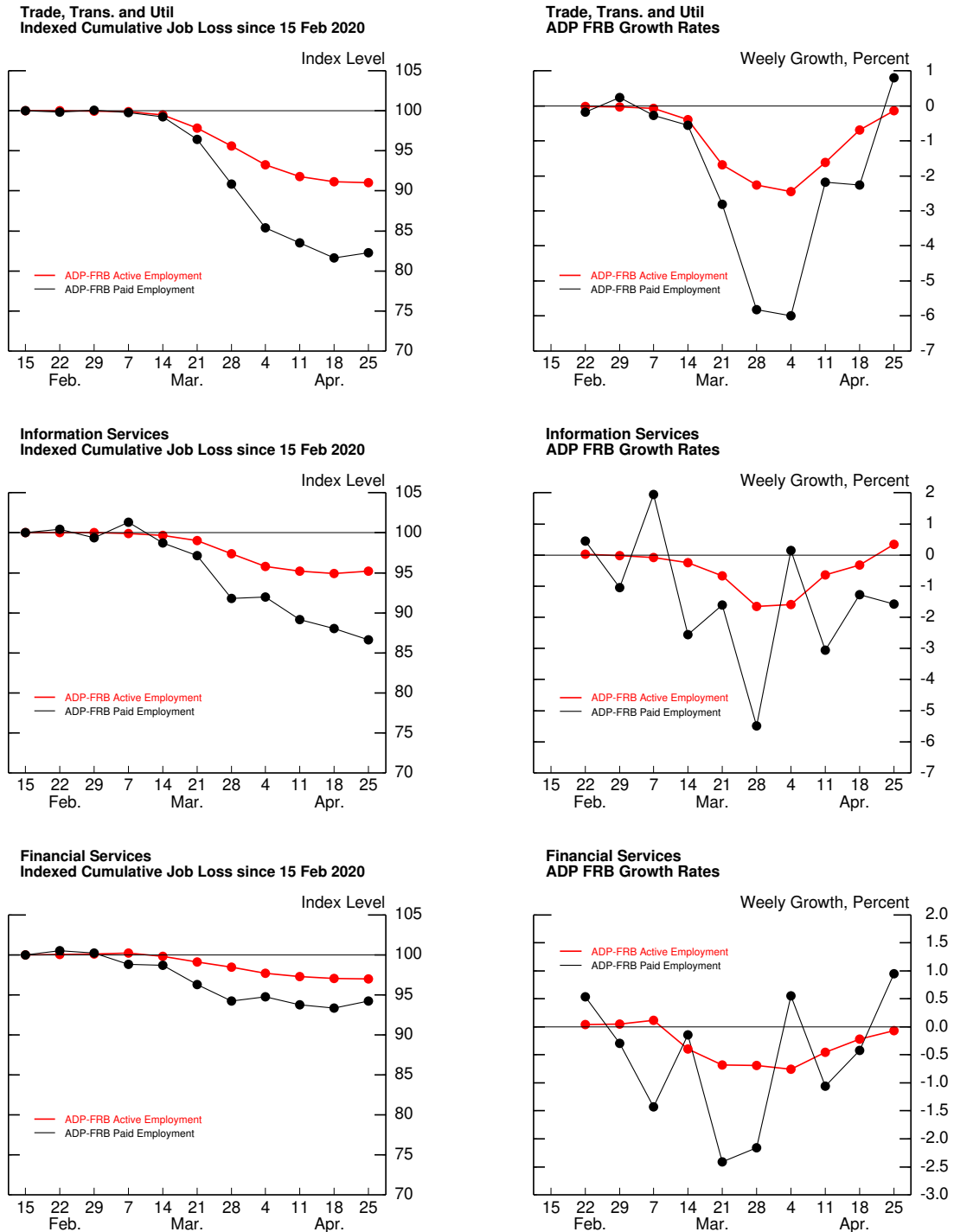


**Manufacturing**  
ADP FRB Growth Rates



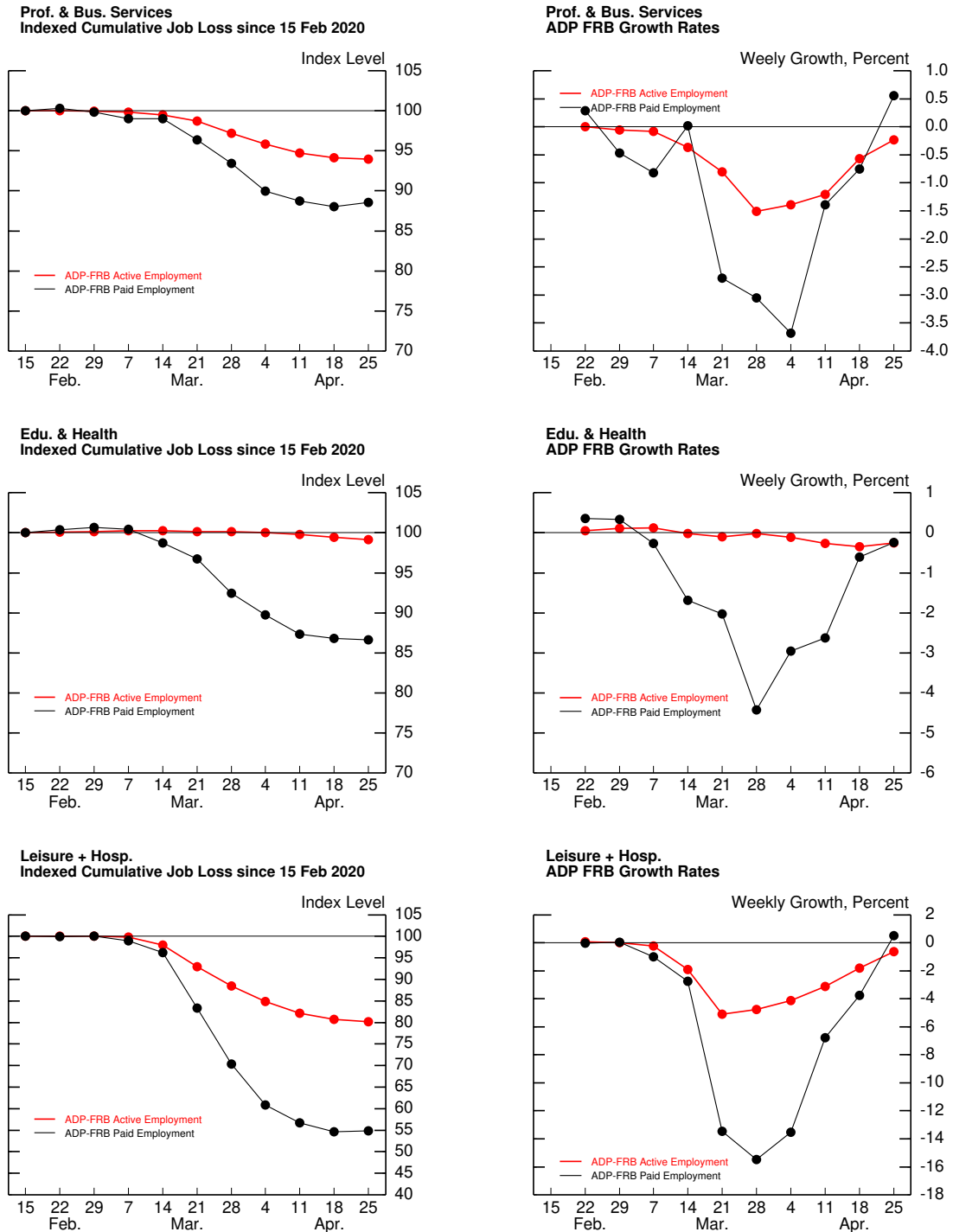
Notes: Figure shows the trend in employment within the ADP business-level sample through the April 18th pay periods. Employment changes are relative to February 15th. The black line shows the trend in paid employment. The black line shows the trend in active employment. All trends are weighted such that the ADP sample is representative by business size crossed with 2-digit NAICS industry.

Figure A3: Cumulative and Weekly Employment Change by Sector



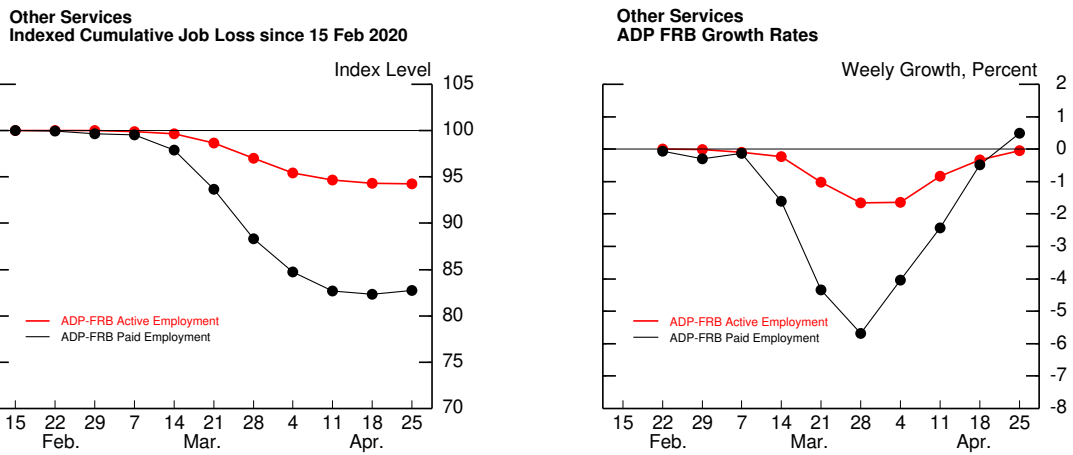
Notes: Figure shows the trend in employment within the ADP business-level sample through the April 18th pay periods. Employment changes are relative to February 15th. The black line shows the trend in paid employment. The black line shows the trend in active employment. All trends are weighted such that the ADP sample is representative by business size crossed with 2-digit NAICS industry.

Figure A4: Cumulative and Weekly Employment Change by Sector



Notes: Figure shows the trend in employment within the ADP business-level sample through the April 18th pay periods. Employment changes are relative to February 15th. The black line shows the trend in paid employment. The black line shows the trend in active employment. All trends are weighted such that the ADP sample is representative by business size crossed with 2-digit NAICS industry.

Figure A5: Cumulative and Weekly Employment Change by Sector



Notes: Figure shows the trend in employment within the ADP business-level sample through the April 18th pay periods. Employment changes are relative to February 15th. The black line shows the trend in paid employment. The black line shows the trend in active employment. All trends are weighted such that the ADP sample is representative by business size crossed with 2-digit NAICS industry.