

# Adjusting Q1 2020 Labor Productivity for COVID-19 Related Job Losses

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# Outline

- Background and usual procedures
- Adjustments to preliminary estimate (5/7/20)
- Adjustments to revised estimate (6/4/20)



# Background on Labor Productivity

- Labor Productivity =  $\frac{\text{Output (BEA)}}{\text{Hours Worked (BLS)}}$
- Hours estimated by combining data from:
  - ▶ CES (W&S employment & PW hours)
  - ▶ CPS (self-employed & non-supervisory)
  - ▶ NCS (hours-worked-to-hours-paid ratio)
- Assume hours from surveys are representative of entire month



# COVID-19-Related Job Loss

- The decrease in employment starting in the 3<sup>rd</sup> week of March was not reflected in the CES
- If we ignored these job losses, we would:
  - ▶ Understate the decline in total hours worked
  - ▶ Overstate the decline in productivity
- Adjustments require high-frequency data – weekly UI claims data



# BLS's Approach

- Estimate March W&S employment week by week using CES data and data on UI claims
- Initial vs. change in continued claims (initial)
- Issues with initial UI claims data
  - ▶ Difficulties in filing claims
  - ▶ Claims for reduced hours (assumed not an issue)
  - ▶ People finding jobs (assumed not an issue)
  - ▶ Seasonal adjustment (we used NSA claims)
  - ▶ Industry detail (OEUS tabulations)





# Adjustments to Prelim Q1

- No adjustments to AWH of W&S workers
- No adjustments to self-employed hours
- Week 1: Feb. CES employment plus trend growth in employment
- Week 2: Unadjusted CES employment

# Adjustments to Prelim Q1 (cont.)

- Week 3: Week 2 employment minus initial UI claims for week ending March 21
- Week 4: Week 3 employment minus initial UI claims for week ending March 28
- Week “5” (March 29-31): Week 4 employment minus a fraction of initial UI claims for week ending April 4



# Adjusted W&S Employment

	<b>March CES (Private)</b>	<b>2020 Q1 Preliminary</b>
<b>Week 1</b>		<b>129,817</b>
<b>Week 2</b>	<b>129,025</b>	<b>129,025</b>
<b>Week 3</b>		<b>126,930</b>
<b>Week 4*</b>		<b>118,756</b>
<b>Average Employment</b>	<b>129,025</b>	<b>126,132</b>

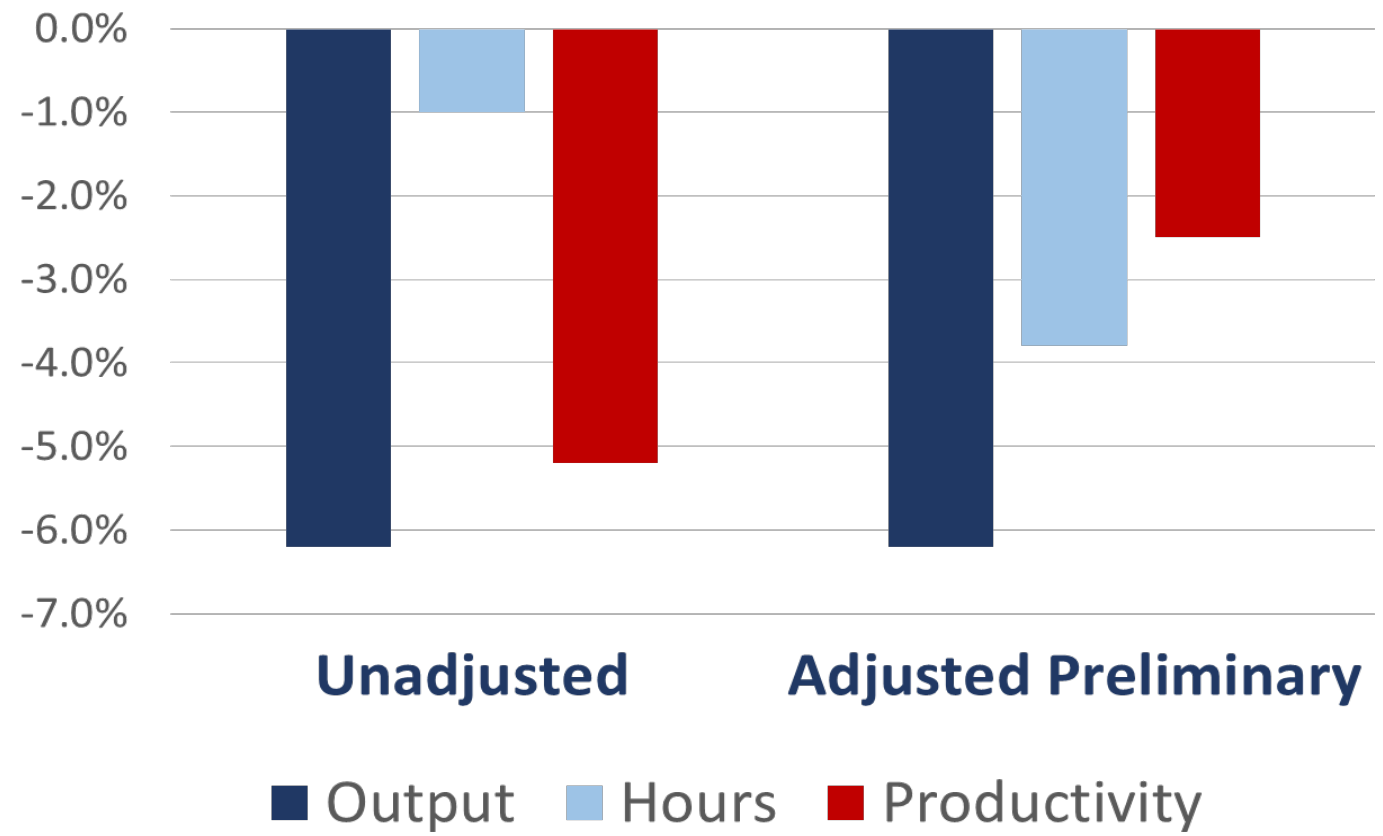
**\* Week 4 includes part of week "5".**





# Impact on 2020q1 Productivity Growth

Annual average percent change from previous quarter





# New Information for Revised Q1

- Revised distribution of initial UI claims
  - ▶ Separate distributions for weeks 3, 4, and “5”
- CES and CPS data for April allowed for interpolation
  - ▶ CES modified the birth-death model to better account for job losses due to closings



# Adjustments to Revised Q1

- Same basic approach for W&S employment, except:
  - ▶ Benchmarked UI claims to the March-to-April decline in CES employment
  - ▶ Revised distribution of UI claims across industries
- Interpolated hours between March and April estimates:
  - ▶ Total hours of self-employed
  - ▶ AWH of W&S workers

# Adjusted W&S Employment

	2020 Q1 March CES	2020 Q1 Prelim	March CES Rev	2020 Q1 Revised
Week 1		129,817		129,812
Week 2	129,025	129,025	128,865	128,865
Week 3		126,930		125,968
Week 4*		118,756		119,976
Week "5" #				117,340
Average	129,025	126,132	128,865	125,302

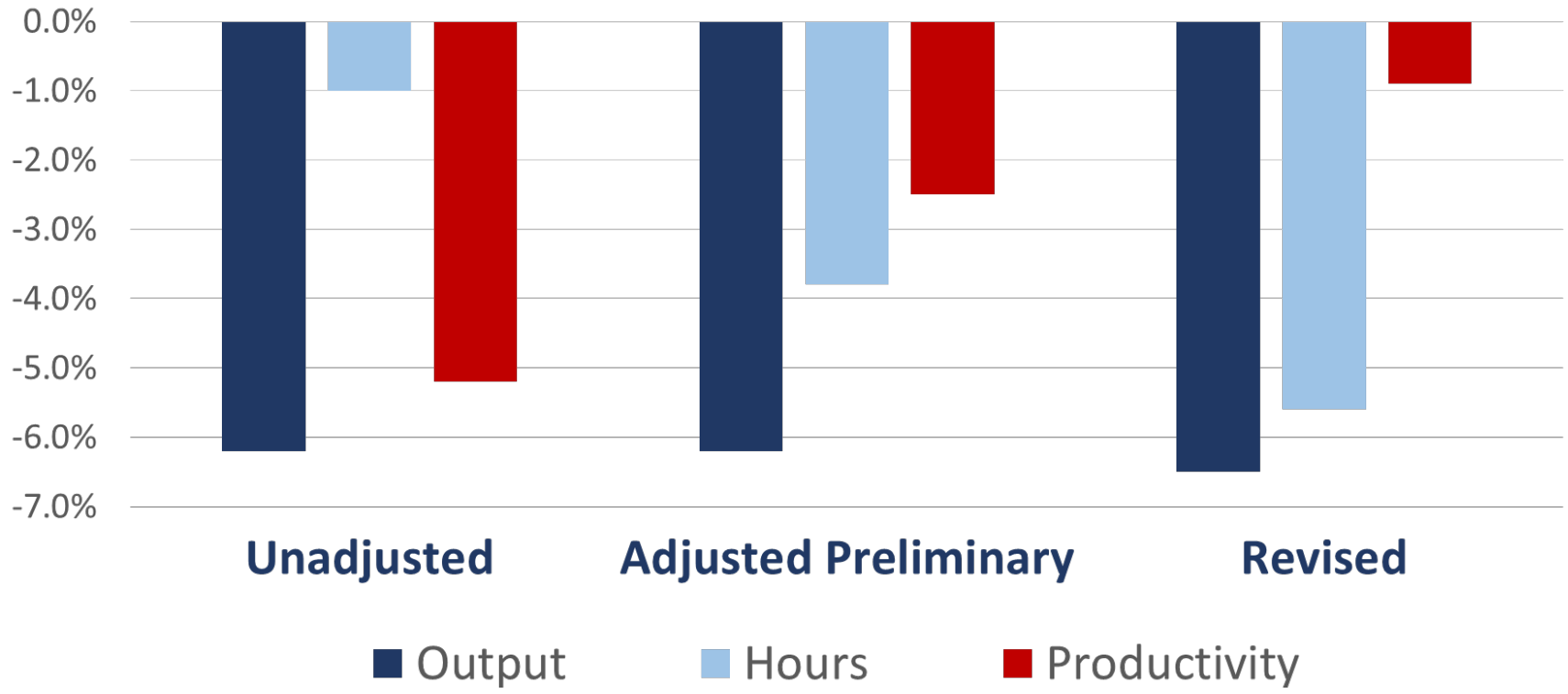
\* Weeks 4 and "5" were combined for the preliminary estimate.

# Week "5" received 3/7 weight.



# Impact on 2020q1 Productivity Growth

Annual average percent change from previous quarter



# Contact Information

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