

BEA's Response to COVID-19: Enhanced Products and Early Research

Erich H. Strassner
Advisory Committee Meeting
November 13, 2020



1. A look at the data

- Economic statistics through the third quarter of 2020

2. The impact of pandemic response programs on the accounts

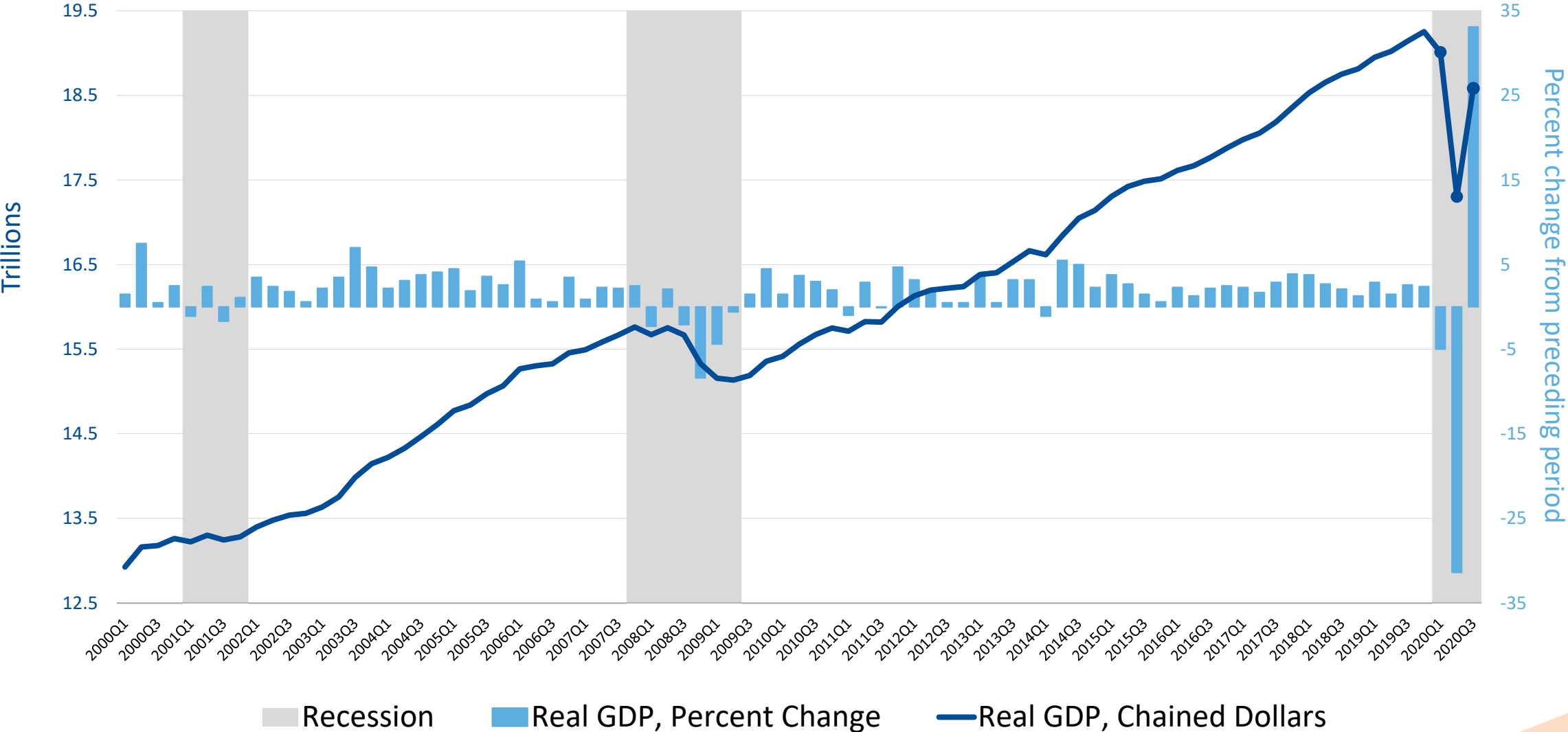
- Government social benefit programs newly enacted as part of the CARES Act and other programs

3. Innovations in measurement during the pandemic

- Novel measurement in program areas
- Daily spending using payment card data and areas of future work

4. Next steps and questions for the committee

Real Gross Domestic Product



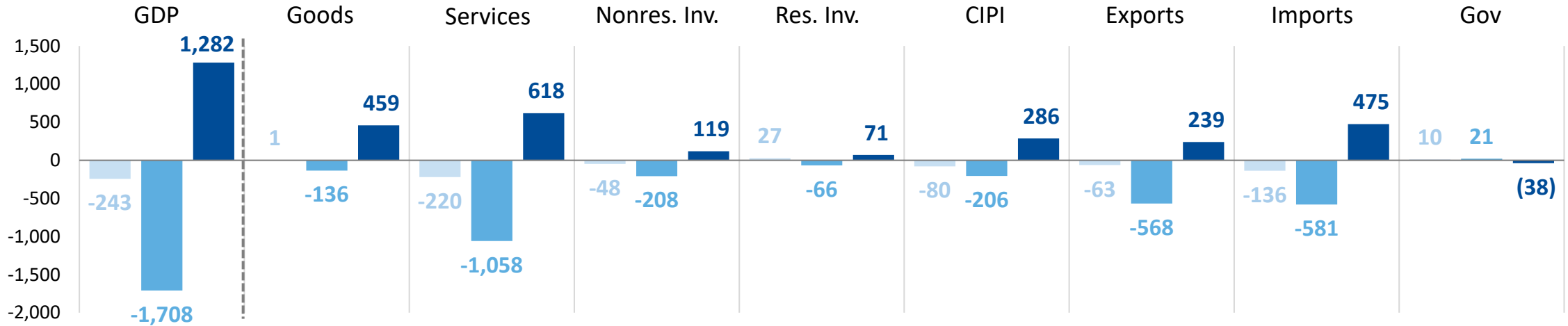
Seasonally adjusted at annual rates

Change in Real GDP

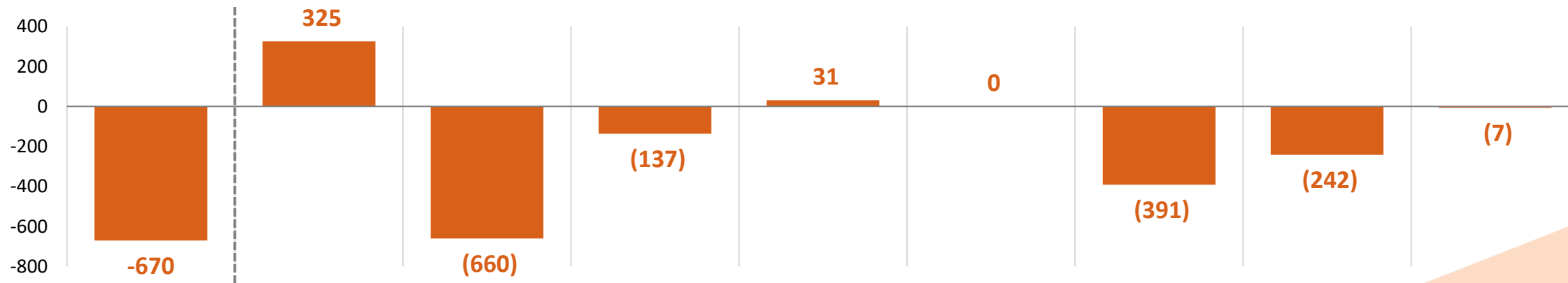
(Billions of chained dollars)

Change from preceding quarter

2020Q1 2020Q2 2020Q3

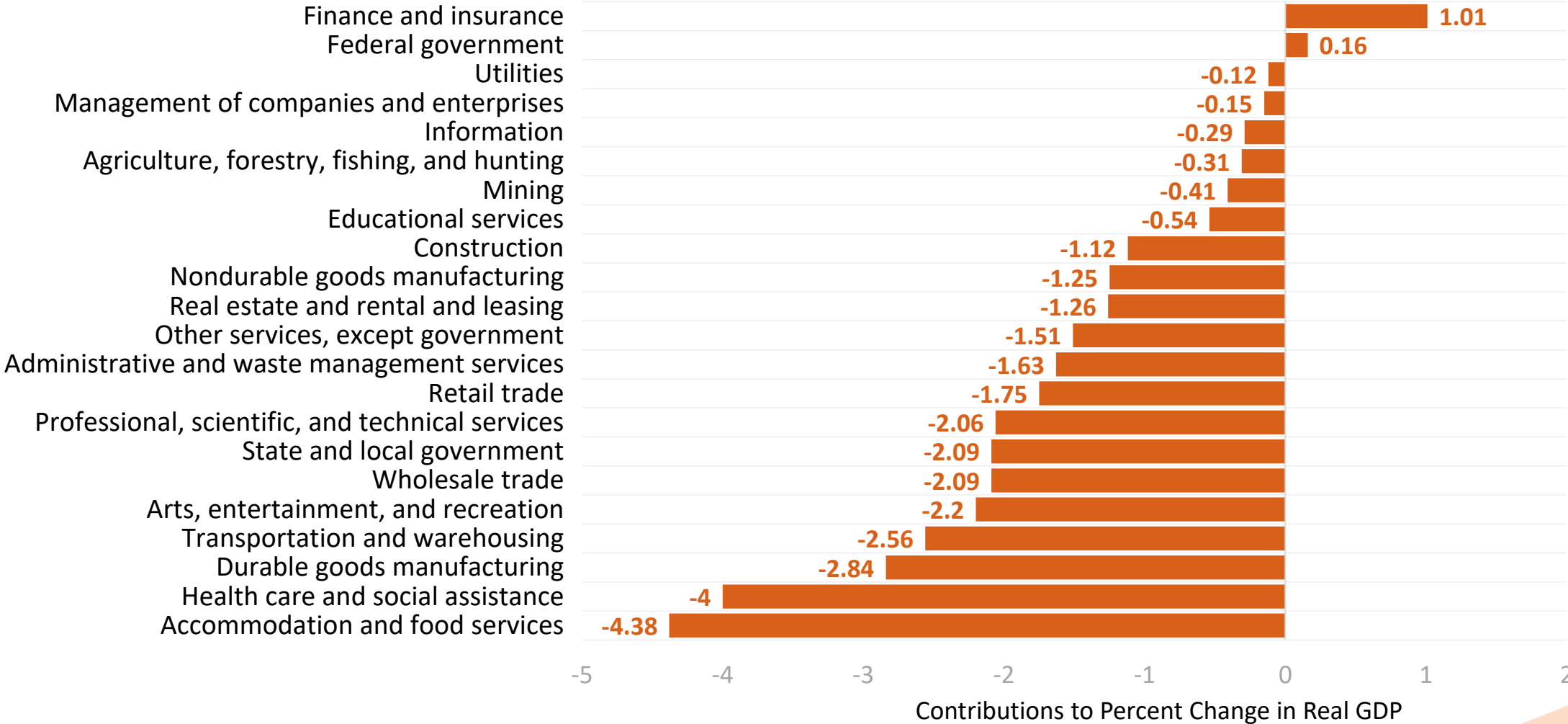


Cumulative change from 2019Q4



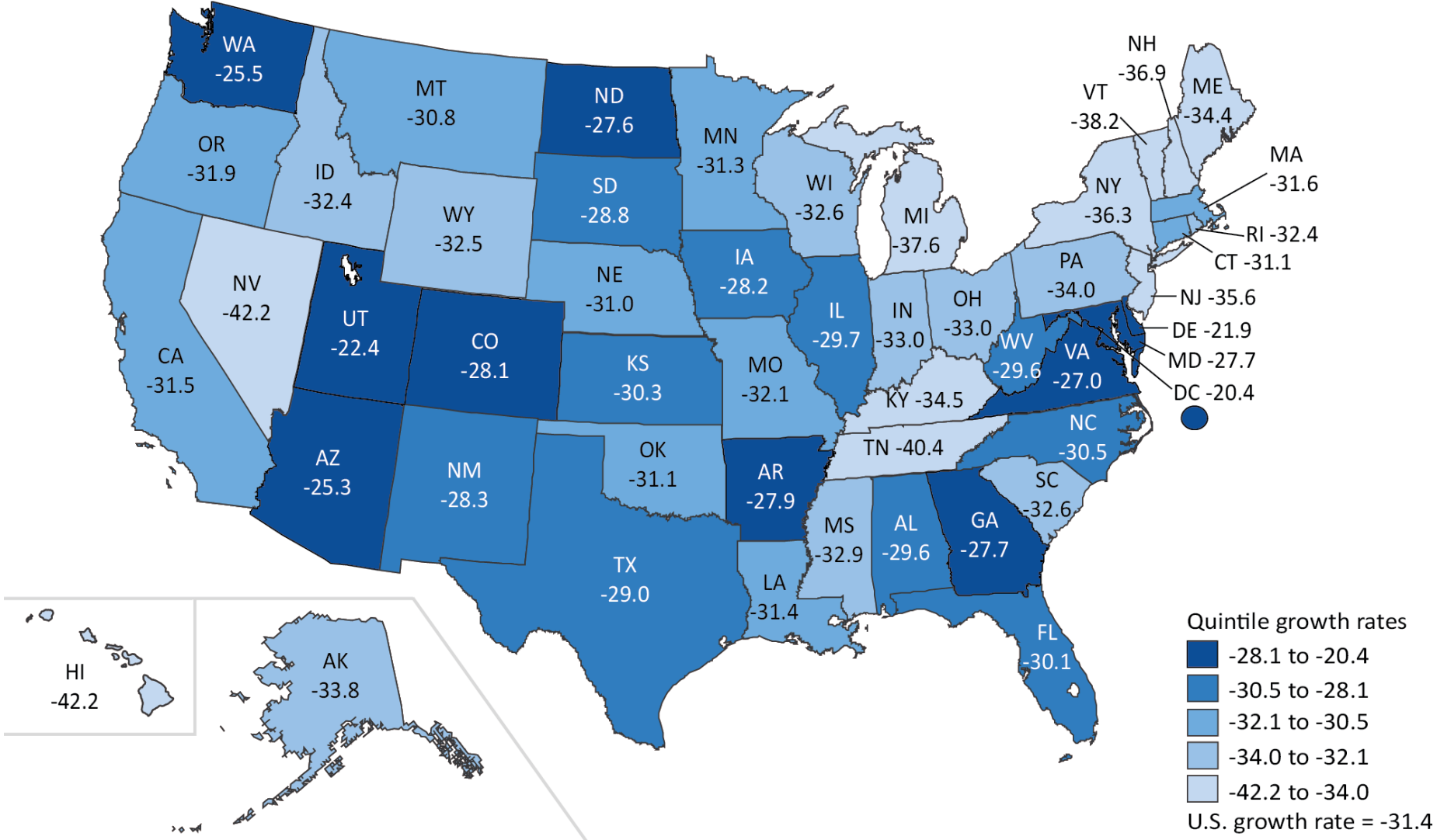
Contributions to Percent Change: by Industry

In 2020Q2, real GDP decreased by -31.4 percent



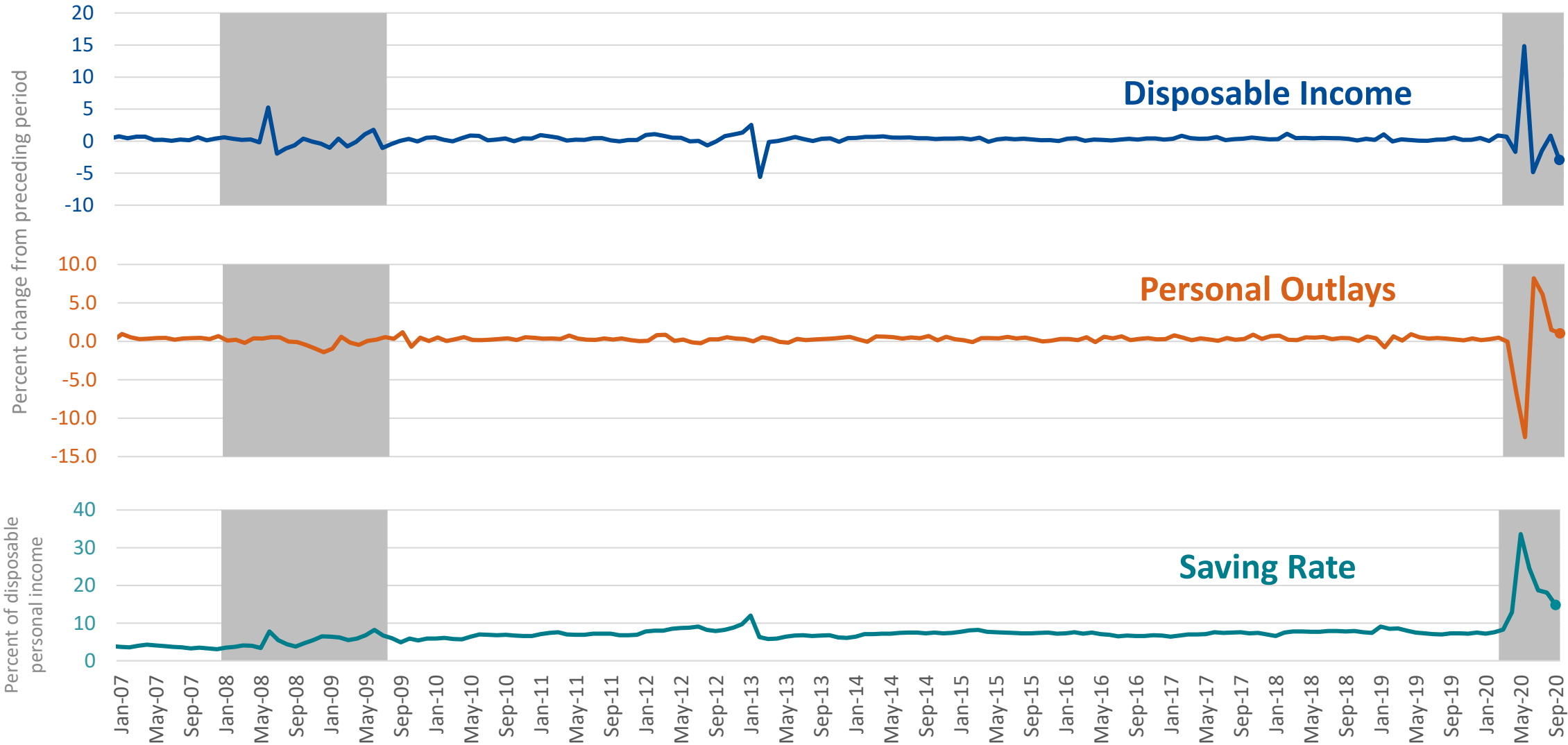
Real (inflation-adjusted) estimates seasonally adjusted at annual rates

Percent Change in Real GDP by State for Q2



Real (inflation-adjusted) estimates seasonally adjusted at annual rates

Current Dollar DPI, Personal Outlays, and Saving



Estimates are seasonally adjusted at monthly rates

Bureau of Economic Analysis
U.S. DEPARTMENT OF COMMERCE

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Federal Recovery Programs and BEA Statistics

COVID-19 and Recovery

This Bureau of Economic Analysis webpage will consolidate information about the COVID-19 virus and federal stimulus programs as they relate to BEA's economic data. Any technical information important to a particular news release will also be published with the news release.

Data

The Effects of Selected Federal Pandemic Response Programs on:

Personal Income

Frequency	PDF Tables	Other Formats
Monthly	August 2020 PDF	XLSX Format XLSX
Quarterly	3rd Quarter 2020 PDF	XLSX Format XLSX

State Personal Income

Frequency	PDF Tables	Other Formats
Quarterly	2nd Quarter 2020 PDF	XLSX Format XLSX

Federal Government Receipts, Expenditures, and Saving

Frequency	PDF Tables	Other Formats
Quarterly	3rd Quarter 2020 PDF	XLSX Format XLSX

Paycheck Protection Program Subsidies by Industry in the National Accounts

Frequency	PDF Tables	Other Formats
Quarterly	2nd Quarter 2020 PDF	XLSX Format XLSX

Paper, Blogs, Articles

COVID-19 Pandemic: Federal Recovery Legislation and the NIPAs

BEA Working Paper Series, WP2020-5

Measuring the Effects of the COVID-19 Pandemic on Consumer Spending Using Card Transaction Data

In: **Authors** [Abe Dunn](#), [Kyle Hood](#), and [Alexander Driesner](#)
U.S. Bureau of Economic Analysis

Date 24 April 2020

FAQs

- How did BEA adjust March 2020 wages and salaries to account for the effects of COVID-19?
- How does the Paycheck Protection Program of 2020 impact the national income and product accounts (NIPAs)?
- How does BEA measure public education services during the closings of schools and college campuses in response to the COVID-19 pandemic?
- How does the 2020 CARES Act affect BEA's estimates of personal interest payments?
- What is the impact of COVID-19 on the State Personal Income statistics for 2020 Q1?
- What is the impact of COVID-19 on statistics on trade in services?

Notes & Technical Information

Use of RIMS II Multipliers—COVID-19

Technical Note

**Gross Domestic Product, Third Quarter of 2020
(Advance Estimate)**
October 29, 2020

This technical note provides background information about the source data and estimating methods used in the production of the GDP and the components of the accounts.

Federal Recovery Tables: Personal Income

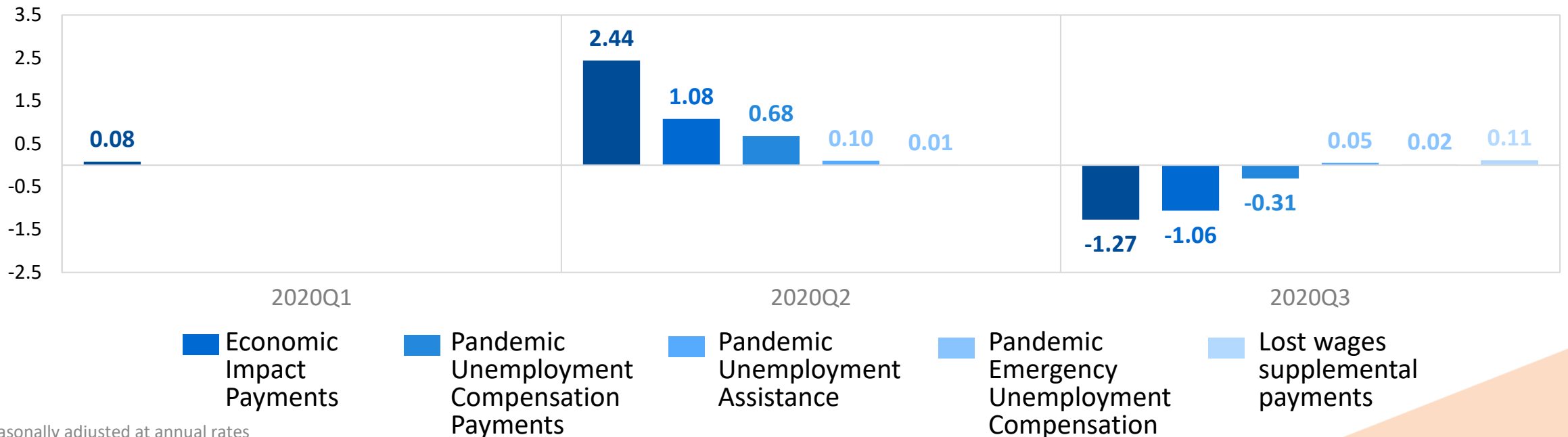
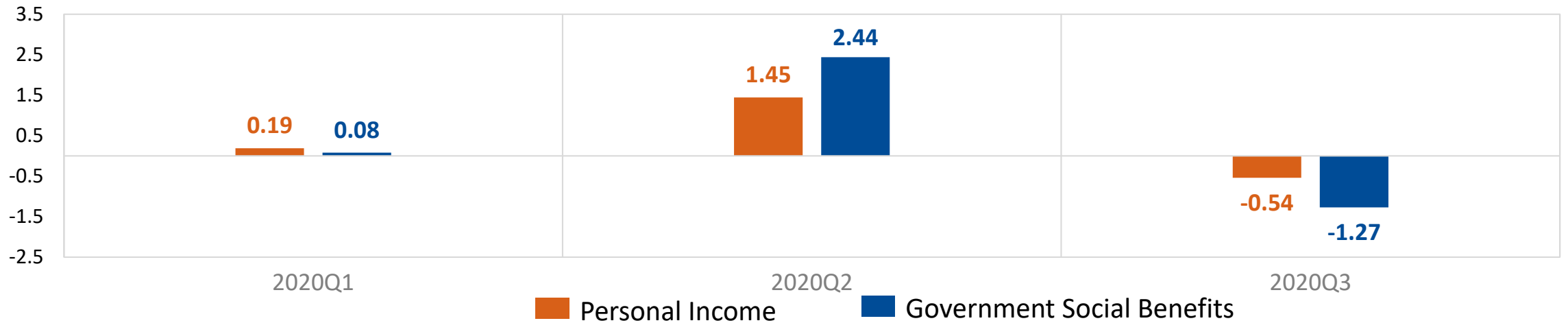
Release Date: October 23, 2020

Effects of Selected Federal Pandemic Response Programs on Personal Income, 2020Q3 Advance
(Billions of dollars, seasonally adjusted at annual rates)

		Levels						Change from preceding quarter					
		2019			2020			2019			2020		
		Q2	Q3	Q4	Q1	Q2	Q3	Q3	Q4	Q1	Q2	Q3	
1	Personal income	18,480.9	18,597.6	18,760.8	18,951.0	20,396.6	19,856.0	116.7	163.1	190.2	1,445.6	-540.6	
2	Compensation of employees	11,391.7	11,438.0	11,564.8	11,674.4	10,880.3	11,407.6	46.3	126.9	109.6	-794.1	527.3	
3	Wages and salaries	9,274.9	9,311.3	9,422.5	9,526.1	8,844.0	9,287.9	36.4	111.2	103.6	-682.1	443.9	
4	Private industries	7,832.5	7,852.3	7,953.0	8,044.5	7,422.4	7,843.6	19.7	100.7	91.5	-622.1	421.2	
5	Government	1,442.3	1,459.0	1,469.5	1,481.6	1,421.6	1,444.3	16.7	10.5	12.1	-60.0	22.7	
6	Supplements to wages and salaries	2,116.8	2,126.6	2,142.4	2,148.3	2,036.3	2,119.7	9.9	15.7	6.0	-112.0	83.4	
7	Proprietors' income with IVA and CCAdj	1,628.5	1,677.0	1,697.7	1,706.0	1,511.9	1,810.8	48.5	20.7	8.3	-194.1	298.9	
8	Farm	36.9	58.9	58.7	56.4	38.9	63.2	22.0	-0.2	-2.3	-17.5	24.3	
	<i>Of which:</i>												
9	Coronavirus Food Assistance Program ¹	...	...	...	...	16.9	18.5	...	...	...	16.9	1.6
10	Paycheck Protection Program loans to businesses ²	...	...	...	...	6.5	9.2	...	...	...	6.5	2.7
11	Nonfarm	1,591.6	1,618.1	1,639.0	1,649.6	1,473.0	1,747.6	26.5	20.9	10.6	-176.6	274.7	
	<i>Of which:</i>												
12	Paycheck Protection Program loans to businesses ²	...	...	...	...	209.1	297.1	...	...	...	209.1	88.0
13	Rental income of persons with CCAdj	786.7	789.7	795.5	802.3	796.1	805.1	3.0	5.9	6.8	-6.3	9.1	
14	Personal income receipts on assets	2,970.2	2,970.1	2,980.4	2,984.3	2,910.2	2,863.5	-0.1	10.4	3.9	-74.1	-46.7	
15	Personal interest income	1,682.6	1,681.7	1,693.4	1,679.7	1,637.0	1,630.1	-0.8	11.7	-13.7	-42.7	-6.9	
16	Personal dividend income	1,287.6	1,288.3	1,287.0	1,304.6	1,273.2	1,233.4	0.7	-1.3	17.6	-31.4	-39.8	
17	Personal current transfer receipts	3,118.6	3,141.9	3,155.2	3,235.5	5,678.0	4,403.3	23.3	13.3	80.3	2,442.5	-1,274.8	
18	Government social benefits to persons	3,071.0	3,034.8	3,108.7	3,189.6	5,627.4	4,357.4	23.8	13.3	80.9	2,437.8	-1,270.0	
19	Social security	1,026.7	1,034.3	1,043.0	1,068.5	1,075.4	1,081.8	7.6	8.8	25.4	6.9	6.4	
20	Medicare	779.7	789.9	797.9	804.7	824.1	842.7	10.2	8.0	6.7	19.4	18.7	
	<i>Of which:</i>												
21	Increase in Medicare reimbursement rates ³	...	...	...	...	9.7	14.8	...	...	...	9.7	5.1
22	Medicaid	615.0	622.3	619.4	624.1	668.8	639.0	7.3	-2.9	4.7	44.7	30.2	
23	Unemployment insurance	27.5	27.6	27.9	43.4	1,084.6	771.5	0.1	0.3	15.5	1,041.1	-313.1	
	<i>Of which: ⁴</i>												
24	Pandemic Emergency Unemployment Compensation	...	...	...	...	7.2	23.2	...	...	...	7.2	16.0
25	Pandemic Unemployment Assistance	...	...	...	...	101.5	154.8	...	...	...	101.5	53.3
26	Pandemic Unemployment Compensation Payments	...	...	...	...	679.2	369.8	...	...	...	679.2	-303.4
27	Veterans' benefits	129.8	131.9	134.5	138.6	142.1	145.3	2.1	2.6	4.1	3.5	3.3	
28	Other	432.4	486.9	486.0	510.4	1,832.5	817.0	-3.5	-2.9	24.4	1,322.1	-1,015.5	
	<i>Of which:</i>												
29	Economic impact payments ⁵	...	...	...	...	1,078.1	15.6	...	...	...	1,078.1	-1,062.5
30	Lost wages supplemental payments ⁶	...	...	...	...	...	106.2	...	...	...	...	106.2
31	Paycheck Protection Program loans to NPISH ²	...	...	...	...	19.1	27.0	...	...	...	19.1	7.9
32	Provider Relief Fund to NPISH ⁷	...	...	...	...	160.9	56.7	...	...	...	...	-104.2
33	Other current transfer receipts, from business (net)	47.5	47.1	46.5	45.9	50.6	45.9	-0.4	-0.6	-0.6	4.7	-4.7	
34	Less: Contributions for government social insur	1,414.7	1,419.0	1,432.9	1,451.5	1,379.9	1,434.4	4.2	13.9	18.7	-71.7	54.5	
35	Less: Personal current taxes	2,222.5	2,197.1	2,221.2	2,252.4	2,095.7	2,191.8	-25.3	24.1	31.2	-156.7	96.1	
36	Equals: Disposable personal income (DPI)	16,258.4	16,400.5	16,539.6	16,698.6	18,300.9	17,664.2	142.1	139.1	159.0	1,602.3	-636.7	
37	Less: Personal outlays	15,072.3	15,219.9	15,335.8	15,103.3	13,590.0	14,881.5	147.6	115.9	-232.5	-1,513.3	1,291.5	
38	Personal consumption expenditures	14,437.3	14,645.3	14,759.2	14,545.5	13,097.3	14,334.8	148.0	113.9	-213.7	-1,448.1	1,297.4	
39	Personal interest payments	364.7	364.9	364.6	352.9	286.0	287.4	0.2	-0.3	-11.7	-66.9	1.4	
	<i>Of which:</i>												
40	Student loan forbearance ⁸	...	...	...	-7.1	-36.0	-36.0	...	...	-7.1	-28.9	0.0
41	Personal current transfer payments	210.3	209.7	212.0	204.9	206.6	199.3	-0.6	2.3	-7.1	1.7	-7.3	
42	To government	114.9	115.5	116.0	112.2	112.5	113.0	0.6	0.5	-3.8	0.3	0.5	
43	To the rest of the world (net)	95.4	94.2	96.0	92.7	94.1	86.3	-1.2	1.8	-3.4	1.5	-7.8	
44	Equals: Personal saving	1,186.1	1,180.6	1,203.8	1,595.3	4,711.0	2,782.7	-5.5	23.2	391.5	3,115.6	-1,928.3	

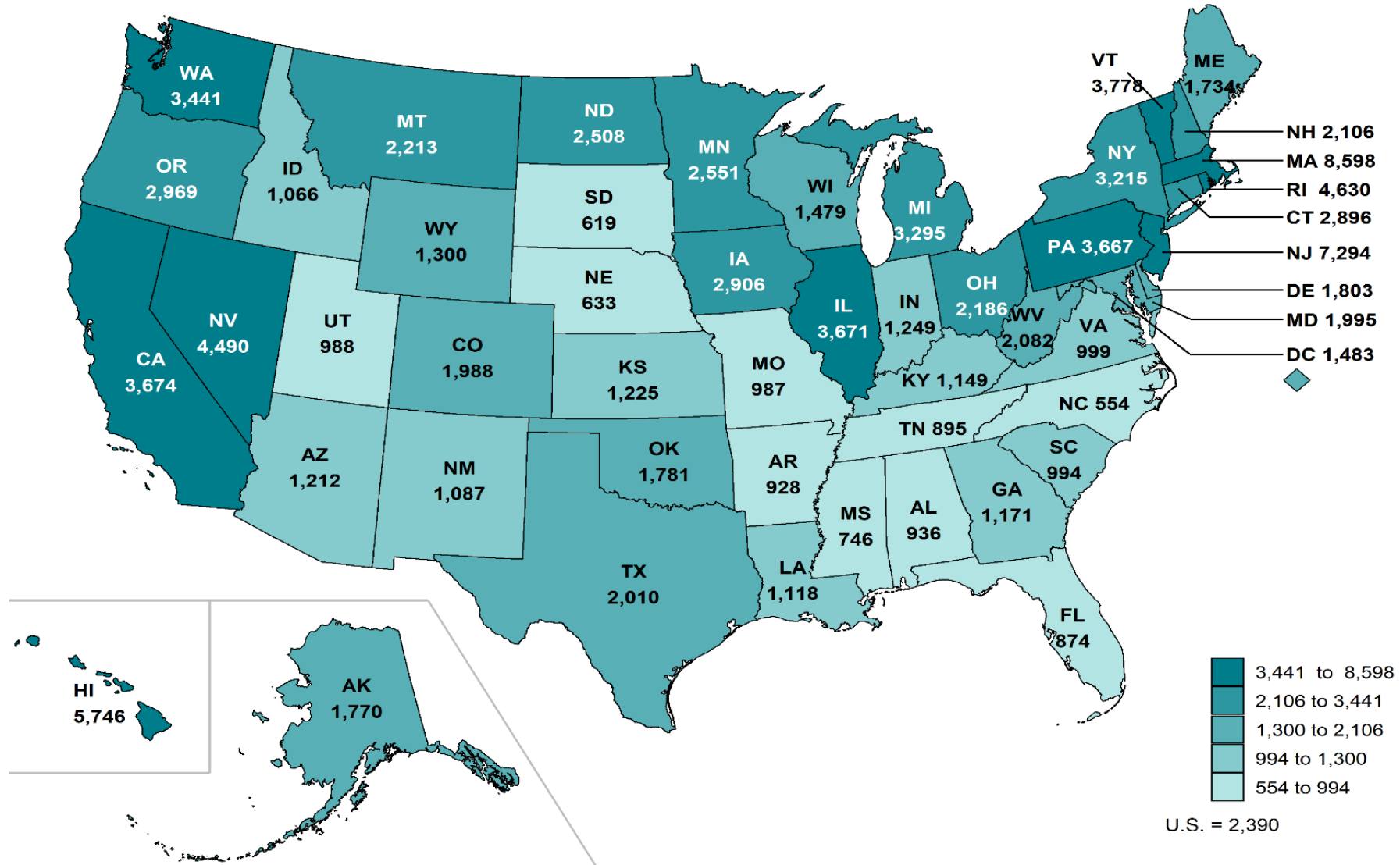
Federal Recovery Impacts: U.S. Personal Income

(Changes in level, trillions of dollars)



Federal Recovery Impacts: Combined Unemployment Insurance Benefits for Q2

(Current dollar per capita at an annual rate)



- Partnered with Census and BLS to understand quality and coverage of routine source data
- Identified and vetted alternative data sources and methods, including expanded use of payment card and volume data
- Monitored and evaluated government responses to ensure accurate treatment in the accounts
- Assessed trade association and other reports on business reopenings

- Standard estimates of consumer spending on services:
 - Based on the Census Bureau's Quarterly Services Survey
 - Full details not available until after 2nd GDP estimate
 - Initial quarterly and monthly estimates are based on less complete information
- Novel approaches to alternative indicators, including:
 - Health care: private volume measures of service utilization, real-time payment card transactions
 - Communication services: revenue/financial data for phone service providers
 - Mass transit: private internet-based sources
 - Air travel: Transportation Safety Administration (TSA) data
 - Numerous other indicators

- Standard estimates:
 - Quarterly state data from the Centers for Medicare & Medicaid Services
 - Monthly state unemployment data from the Department of Labor
 - Trend distribution and extrapolation of annual state estimates
- Incorporated additional state level data, including:
 - Paycheck Protection Program data from Small Business Administration
 - Economic Impact Payments data from the Internal Revenue Service
 - Provider Relief Funds data from the Department of Health and Human Services
 - Pandemic Unemployment Assistance Program data from the Employment and Training Administration
 - Coronavirus Food Assistance Program data from the Farm Service Agency

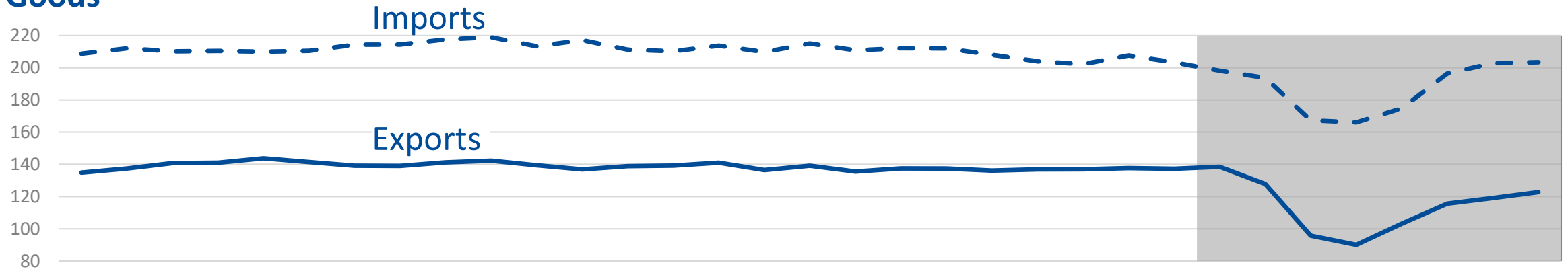
- A large share of the value of U.S. international trade in services is estimated based on BEA survey data
 - Survey data are not available for first quarterly estimates
 - Indicator-based and trend-based estimates generally used instead
 - Trend-based approach not reasonable under COVID-19
- Trend-based estimates for the most recent quarter in *select categories* were adjusted using patterns in company-level sales data
 - Licenses for the use of outcomes of R&D
 - Franchises and trademarks licensing fees
 - Professional and management consulting services
- Underlying idea: These categories of intercompany services are often billed based on the level of sales of goods and services by the purchasing affiliate

International Trade

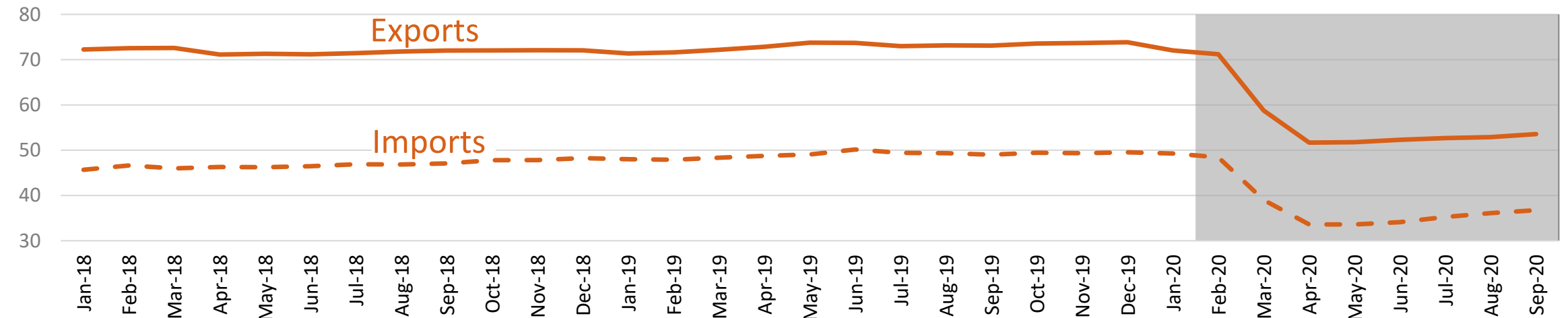
(Billions of current dollars)



Goods



Services

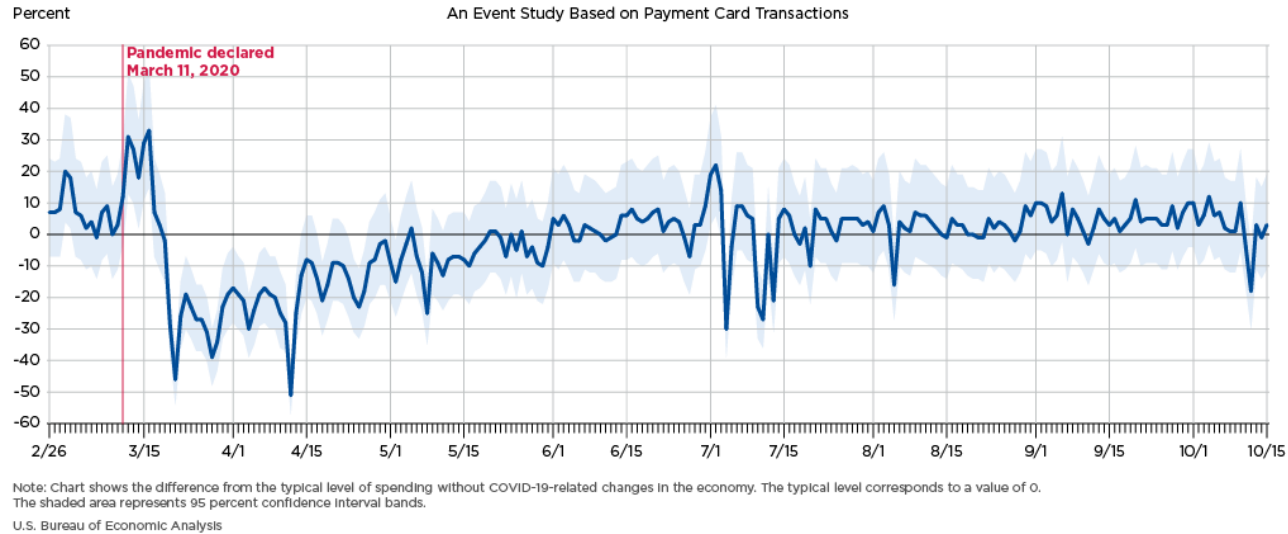


- Disruptions to normal processes
 - Survey mailings delayed or canceled
 - Survey respondents adversely affected
- BEA response
 - Expanded use of email contact
 - Redirected resources to phone contact with key respondents
 - Requested estimates by phone for key variables for respondents that could not report
- Response rates within normal range
- Early use of services survey data
 - Typically available with one quarter lag
 - Early look at data for key companies allowed for more accurate preliminary estimates than using historical trends

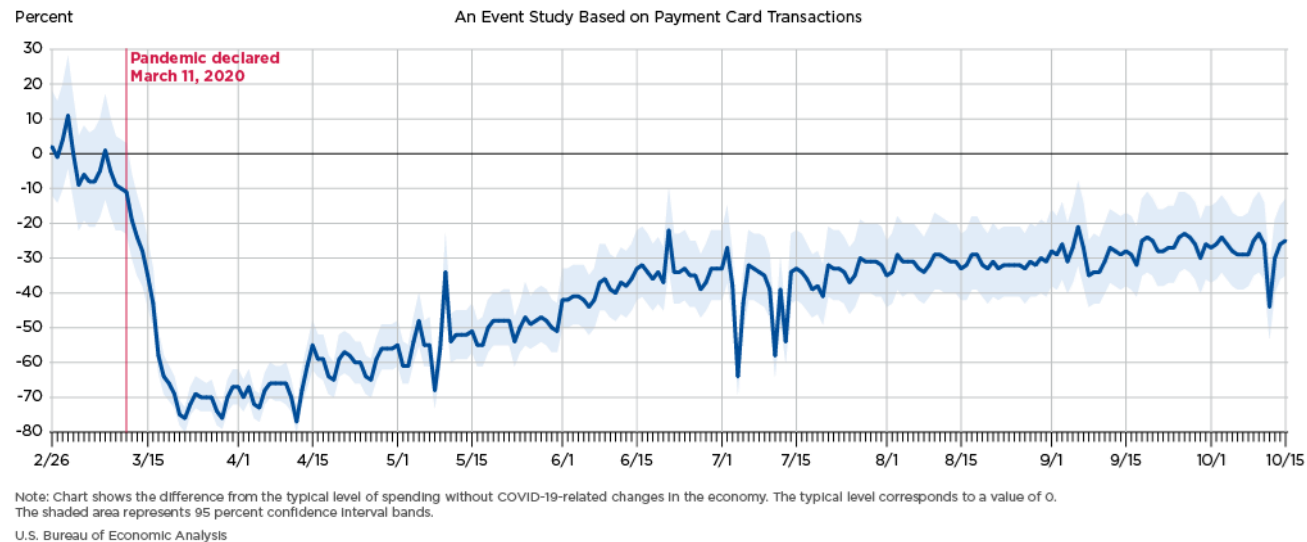
- The COVID-19 pandemic caused rapid shifts in economic conditions (days or weeks vs. months or quarters)
- Card data provide timely, frequent measures of spending
 - Fiserv is a card transaction intermediary with over \$2 trillion in annual worldwide transactions
 - Daily frequency from all types of payment cards (e.g., credit, debit, gift cards)
 - Key NAICS categories correlate with national estimates
- BEA estimates of card spending
 - Categories are selected based on quality and availability
 - A simple linear model is applied to remove noise and seasonal variation
 - Estimates are updated frequently (now approximately once per week)
 - The data published cover the period up to a week before publication
 - <https://www.bea.gov/recovery/estimates-from-payment-card-transactions>

Daily Spending Estimates from Card Transactions

Spending on Retail and Food Service (Excluding Nonstore Retailers)



Spending on Food Services and Drinking Places



- Investigated price measurement during COVID-19 with implications for inflation when products are unavailable
 - To be discussed at the next Federal Economic Statistics Advisory Committee (FESAC) meeting: bea.gov/fesac/
- Formed a Research and Impact Analysis Working Group to apply lessons learned about measurement during pandemic to leverage and improve BEA's core accounts and underlying data
 - A goal is to model economic impacts across industry and geography to understand the eventual recovery

BEA will continue to leverage its expertise and add value during and after the COVID-19 pandemic. We welcome your feedback and suggestions on areas for further work:

- What are your ideas for other supplemental materials BEA can provide?
- Do you have suggestions for research and longer-run initiatives in light of COVID-19 developments?
- What other innovations do you think BEA can support, especially looking toward economic recovery?