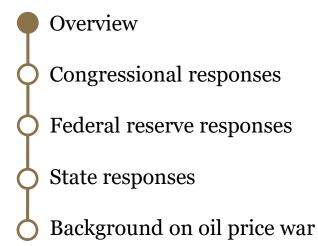
Coronavirus: economic impacts and policy responses

An overview of the impacts of COVID-19 on the economy and related policy responses

May 11, 2020

ProducerAugust Gebhard-Koenigstein



A coronavirus-driven depression is a growing possibility



The longer the coronavirus outbreak lasts, the more of a threat it poses to the world economy Economic consequences of coronavirus:

- Market disruption: supply chain slow-down, economic activity suddenly halted
- Heightened caution: spooked investors, increased uncertainty, depression fears

The Dow wiped out all gains since Pres. Trump took office before having its biggest gain since 1933; it has remained volatile since

02/03/2020 TO 05/08/2020





There are currently many unknowns: the virus is not fully understood yet, true rates of infection and immunity are not clear, policy responses are likely to be uneven and delayed, and firm/household reactions cannot be fully predicted



Annualized Q2 GDP Projections:

JP Morgan: -40% Goldman Sachs: -34%

WSJ Economic Forecast Survey: -25%



Unemployment projections:

JP Morgan: 20% by the end of April

Goldman Sachs: 15% peak St. Louis Fed: 32% in Q2

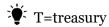
Sources: USA Today, Investing.com, CNBC, Business Insider, LA Times, The Hill, The Wall Street Journal.

Summary of CBO's new preliminary projections

2020	Annual
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	Q1	Q2	Q3	Q4	2020	2021
Real GDP (% change from previous quarter)	-0.9	-11.8	5.4	2.5	n.a.	n.a.
Real GDP (% change, annualized rate)	-3.5	-39.6	23.5	10.5	-5.6	2.8
GDP (trillions of USD)	21.6	19.1	20.1	20.7	20.4	21.3
Unemployment rate (%)	3.8	14.0	16.0	11.7	11.4	10.1
Interest rate on 3- month T-bill (%)	1.1	0.1	0.1	0.1	0.4	0.1
Interest rate on 1- year T-notes (%)	1.4	0.6	0.7	0.7	0.8	0.7

Real GDP at the end of 2021 is projected to be 6.7 percent less than what CBO projected in its January 2020 economic outlook

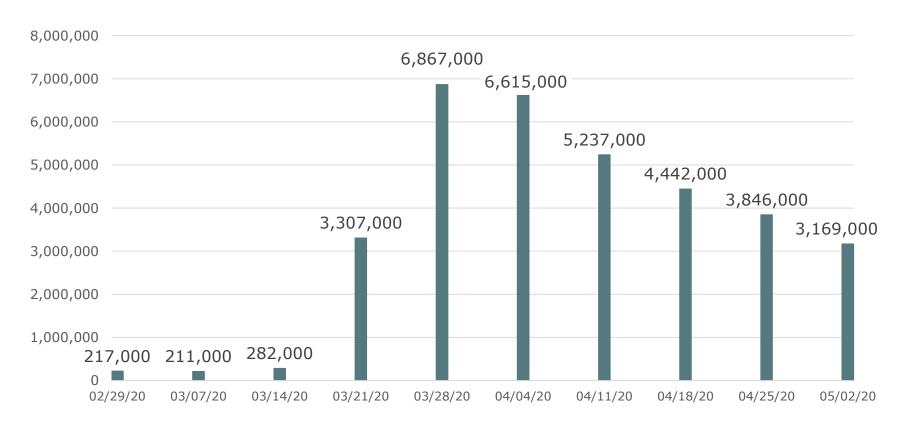


Sources: Congressional Budget Office.

The number of unemployment insurance claims has decreased for four consecutive weeks

Initial unemployment insurance weekly claims, seasonally adjusted

FEBRUARY 29, 2019 - MAY 2, 2020



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Congress's three-phase response to the coronavirus crisis and potential next steps

Phase 1 Phase 2 Phase 3 Initial support and vaccine Paid leave, unemployment Major economic stimulus development and food assistance package H.R. 6074 — Coronavirus H.R. 6201 — Families First H.R. 748 CARES Act Major stimulus package (\$2 trillion) **Preparedness and Response Coronavirus Response Act** Loans and support to major industries, **Supplemental Appropriations Act** \$100 billion in worker assistance, including emergency paid sick leave, including airlines and small businesses \$8.3 billion in COVID-19 response Direct payments to individuals and funding for developing a vaccine and food assistance, and unemployment families preventing further spread of the virus payments Became law on 3/27/20 Became law on 3/18/20 • Became law on 3/6/20 Phase 3b Phase 4 - TBD Additional funding for small Additional economic support (likely) Infrastructure (maybe) businesses/hospitals Speaker Pelosi's priorities for Phase 4 include additional S.Amdt.1580 Paycheck Protection payments to individuals and small businesses, expanded **Program and Health Care** food assistance, and paid sick leave **Enhancement Act**

• Congress does not return until April 20th

from some senior Republicans

• Pelosi also suggested infrastructure spending, an idea

backed by President Trump, but was met with resistance

Sources: The Wall Street Journal, The Washington Post, Congress.gov, US News.

\$310 billion for the depleted Paycheck Protection Program, additional

funding for hospitals and testing

Became law on 4/24/20

Phase 3 (H.R. 748): Middle Class Health Benefits Tax Repeal Act (Vehicle for third coronavirus package)

Introduced 3/23/20

Passed Senate 3/25/20

Passed House 3/27/20

To president 3/27/20

Signed into law 3/27/20

Total cost: \$2 trillion

- Direct payments to individuals:
 - \$1,200 per adult, with an additional \$500 per child
 - The full amount will go to individuals who earn >\$75,000/year or \$150,000 for married couples; the payments scale down for higher-earning individuals, phasing out completely at \$99,000 for individuals, \$146,500 for heads of households with one child, and \$198,000 for joint filers without children
- * \$500 billion lending funds for industries, states, and localities
 - Loans for companies with more than 500 employees
 - \$25 billion in loans to airlines; \$4 billion to cargo carriers
 - Bans loans to businesses owned by the president, vice president, heads of executive departments, or members of Congress

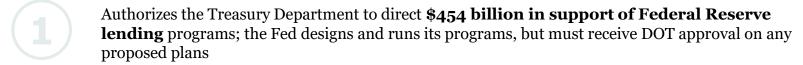
- Hospital investments
 - \$100 billion for hospitals
 - \$1 billion to Indian Health Service
 - \$16 billion for building a stockpile of medical equipment
 - Increases reimbursements by 20% for treating Medicare patients with coronavirus
- \$350 billion in loans for small businesses
 - Loans to small businesses would be forgiven if payrolls are maintained
- Unemployment benefits increased \$600/week for four months
- New Treasury IG and Congressional Oversight Board
- State and Local Funds
 - \$150 billion for state and local funds, including \$8 billion for tribal governments

Sources: PBS Newshour, CNN, The Wall Street Journal, The Hill, Vox

Slide last updated on: March 27, 2020

The enacted stimulus package contains numerous provisions that pertain to the financial sector

The bill supports Fed lending and offers different types of regulatory relief



- Authorizes **the Federal Deposit Insurance Corporation** (FDIC) to **revive crisis-era backstop measures** allowing it to guarantee bank-issued debt, as well as noninterest-bearing transaction deposits (e.g. checking accounts) beyond the FDIC's typical \$250,000 limit
- Allows banks the option of **temporarily delaying compliance with the Current Expected Credit Losses (CECL) standard**, an accounting standard used to estimate allowances for credit losses
- **Protects consumers' credit reports** in the event that they must make any coronavirus-related loan modifications; does so by requiring financial instructions to designate qualifying modified loan payments as "current" in reports to credit reporting agencies until 4 months after the state of emergency has been officially lifted
- Eases capital requirements for small banks by decreasing the community bank leverage ratio by 1 percent (from 9 percent to 8 percent)
 - **Suspends federal student loan payments** until Sep. 30, **allows up to 6 months** of forbearance for consumers who have taken out federally backed mortgage loans, and **bans foreclosures** on such loans **for 60 days**

Tax policy implications of the phase 3 relief package (CARES Act)



Provides "**recovery rebates**" consisting of cash payments of up to \$1,200 per taxpayer; the rebates will be based on 2019 tax returns, or 2018 tax returns for those who have not yet filed 2019 taxes



Establishes an **employee retention tax credit** for certain eligible employers; this 50 percent refundable payroll tax credit can be applied to wages paid of up to \$10,000 for business affected by the virus and the credit may be claimed for furloughed employees (guidelines can be found on the IRS website)



Allows employers to **delay their payroll tax liabilities** until 2021 or 2022, allowing businesses to have more cash on hand during the crisis



Relaxes operating loss-deduction rules, allowing businesses to get more tax relief



Excludes up to \$5,250 of certain employer contributions towards student loan payments from taxable income



Amends the Internal Revenue code to **make qualified improvement property (QIP) eligible for bonus depreciation** by granting it a recovery period of a 15-years (fixing the "retail glitch")



Temporarily expands business interest expense deductions

The CARES act adopts a multipronged approach to expanding unemployment insurance (UI) benefits



- Extends unemployment benefits to workers who would have normally not qualified for federal and state programs, but would be working absent coronavirus
- These benefits are fully funded by the federal government and offered for up to 39 weeks
- Eligible workers include the self-employed, individuals with limited work history, and independent contractors
- Excludes workers who are able to work from home with pay or receive any form of paid-leave



- Extends unemployment benefits to certain workers who have quit their jobs for reasons pertaining to the coronavirus
- Applies to those who contracted the virus and those without paid leave benefits who had to quit their jobs to take care of relatives



- **Increases the unemployment benefit** for eligible individuals to the sum of what the individual would receive at the state level and **\$600** provided by the federal government
- This expansion in benefit amount is called "Federal Pandemic Unemployment Compensation"



Allows states to **provide federally-funded unemployment compensation for an additional 13 weeks** (bringing the maximum weeks of benefits up from 26 to 39)

Phase 3b (H.R. 266): Paycheck Protection Program and Health Care Enhancement Act

Introduced 4/21/20

Passed Senate 4/21/20

Passed House 4/23/20

To president 4/23/20

Signed into law 4/24/20

Total cost: \$484 billion

- Additional funding for small businesses
 - \$310 billion for the depleted Paycheck Protection Program, created in the Phase 3 stimulus package
 - \$60 billion for underbanked businesses, such as community-based lenders, small banks and credit unions, and mid-sized banks and credit unions
 - Provides forgivable loans to business that maintain employees on payroll
 - \$50 billion for Small Business Administration (SBA) emergency disaster lending
 - \$10 billion in grants under the Emergency Economic Injury Disaster Loan program
 - \$2.1 billion for additional salaries and expenses for the SBA

- Hospital investments
 - \$75 billion for hospitals and health care providers, including funding for Personal Protective Equipment
- \$25 billion in funding for COVID-19 testing
 - \$11 billion given to states and localities to develop, administer, and process tests
 - Additional funds will be given to federal agencies and distributed to labs
 - Requires a strategic plan "related to providing assistance to states for testing and increasing capacity," and also requires that states develop a plan on how the funding will be used for testing

Sources: Politico, Speaker Nancy Pelosi press release, CNN, The Washington Post.

Slide last updated on: April 24, 2020

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The Fed is using many of the tools at its disposal (1/3)

Key actions taken by the Fed

1. Decreased Federal Funds Rate

- Cutting the rate makes borrowing cheaper because various consumer loan interest rates are pegged to it
- Federal Funds Rate = interest rate that banks must pay to lend funds to each other overnight
- The Fed decreased the rate down to between o and 0.25

3. Expanded discount window

- Discount window = short term loans directly from the Federal Reserve for banks
- Discount rate = rate banks pay on those short term loans; the Fed decreased the rate by 150 basis points
- Using the discount window usually signals distress, but major banks announced they would use it to decrease stigma

2. Massive quantitative easing

- Quantitative easing = Federal Reserve purchases government bonds and other assets to add cash to the market
- Originally stated it would buy \$700 billion in bonds and mortgage-backed securities, but has announced no-limit purchases of corporate and municipal bonds

4. Relaunched lending facilities and created new ones

- Lending facilities = short term loans to financial institutions secured by certain high-quality assets, to limit uncertainty in markets for those assets
- Lending facilities expanded or created: Money Market Mutual Funds (including municipal), corporate debt, and consumer debt

Sources: Board of Governors of the Federal Reserve System, The Brookings Institute, Street Insider

The Fed is using many of the tools at its disposal (2/3)

Key actions taken by the Fed

5. Encouraging lending by banks

- The Fed is temporarily doing away with various regulatory requirements; it has gotten rid of the reserve requirement, and is encouraging banks to reach in to loss-absorbing capital they are required by Dodd-Frank reforms to hold
- By encouraging banks to utilize other forms of capital – like regulatory capital – the Fed wants to stimulate lending so that credit does not dry ur

7. Expanded repo operations

- Two repos capped at \$500 billion
- Repo = repurchase agreement operations
- Repo market disruptions can disrupt the federal funds rate, so the Fed is injecting liquidity into these markets to keep them running smoothly

6. International liquidity swaps

- The Fed is facilitating international central bank access U.S. Dollars by lowering the pricing on international liquidity swap arrangements and extending maturity periods
- The Fed is trying to improve the global liquidity of the U.S. Dollar so that other central banks can lend those dollars to banks that need access to them

8. Small business lending

- The Fed established the Main Street Business Lending Program to support small and mediumsized businesses and make it easier for them to access credit
- The program is meant to complement efforts by the Small Business Administration

The Fed is using many of the tools at its disposal (3/3)

Key actions taken by the Fed

9. Eased access to intraday credit

- The Fed is temporarily loosening regulatory requirements around intraday credit from Fed banks to make it easier for banks to access such credit
- It has temporarily removed limits on uncollateralized intraday credit, in addition to certain overdraft fees; it has also adjusted processes to make collateralized credit more accessible to secondary credit banks
- These initiatives serve to encourage continued lending by banks



10. Eliminated limit on convenient transfers

- The Fed has amended a regulation on reserve requirements to get rid of a six-per-month cap on transfers and withdrawals that bank customers can make to/from their savings accounts
- Previously, customers could exceed this cap but would then be subjected to penalties from their banks
- The impact of this move will likely be somewhat limited, due to the fact that most customers tend to rely on their checking accounts, not their savings accounts, for their day-to-day lives

The Federal Reserve created new lending programs to assist mid-sized firms during the coronavirus pandemic



Though the Fed has not facilitated a direct-lending program since the 1930s, its new **Main Street Lending Program (MSLP)** will provide up to \$600 billion in loans through two emergency-lending facilities

How it works:



Businesses can receive financing from either the new or existing lending facilities



Eligible banks issue loans for up to four years and can defer principal and interest payments for a year



Loans are priced using the adjusted Secured Overnight Financing Rate (SOFR) with an additional 2.5 to 4 percentage points (as well as an upfront 1 percentage point origination fee)



Eligible businesses can borrow up to \$25 million for the new-loan facility or \$150 million for the existing-loan facility; the minimum loan size is \$1 million

Eligibility:

- Aims to support larger firms unable to obtain funding from the Paycheck Protection Program (PPP), specifically those with:
 - Up to 10,000 employees, or
 - Up to \$2.5 billion in 2019 revenues



Other restrictions: Banks cannot use the proceeds of loans to finance pre-existing loans or other lines of credit. Borrowers can only obtain financing from challenges incurred by the coronavirus pandemic. Borrowers cannot pay dividends or buy back stock during the loan or for 12 months after repayment.

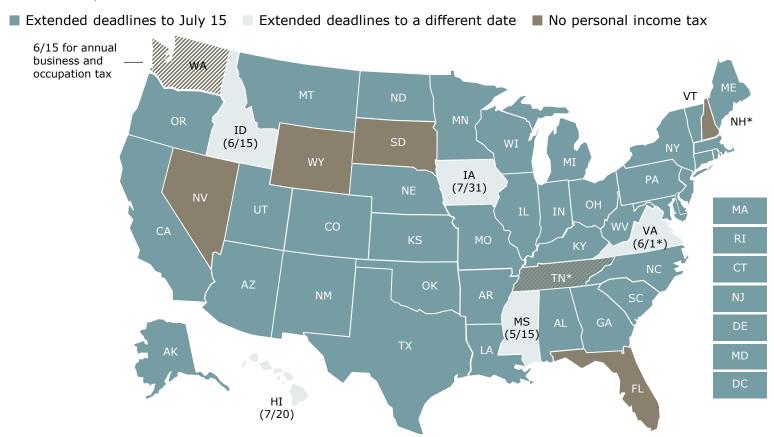
Sources: The Wall Street Journal.

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All states that tax personal income have extended their filing deadlines beyond April 15

State actions on personal income tax filing and payment deadlines due to COVID-19

AS OF APRIL 14, 2020



^{*}New Hampshire and Tennessee do not tax earned income but do tax investment income (NH deadline: 6/15/20; TN deadline: 7/15/20)

Sources: AICPA

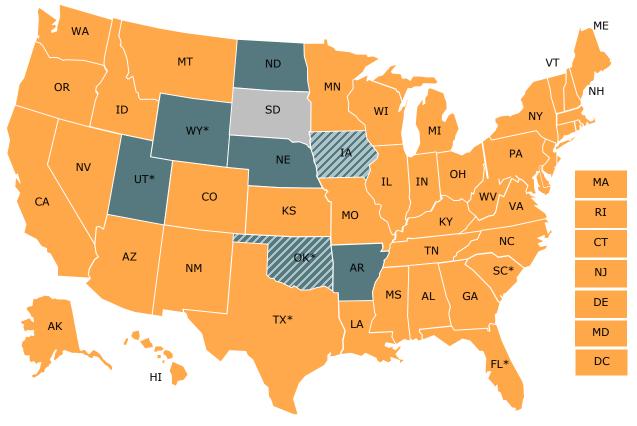
^{**}Virginia extended its tax payments deadline to 6/1/20, but its filing deadline remains 5/1/20

Many states have implemented initiatives that halt various economic activities

Business-related state mitigation strategies

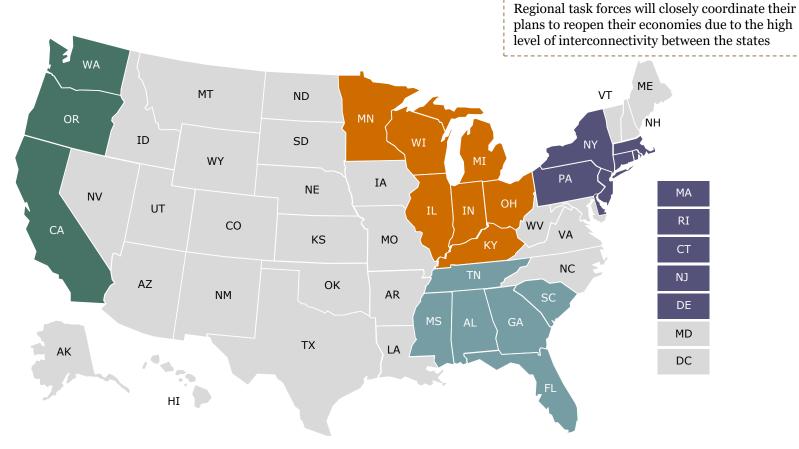
AS OF APRIL 14, 2020

■ Stay-at-home orders/advisories ■ Closed bars and/or restaurants ■ Closed non-essential businesses



Regional task forces on reopening the economy

■ Northeast region ■ Western region ■ Midwest region ■ Southern region*



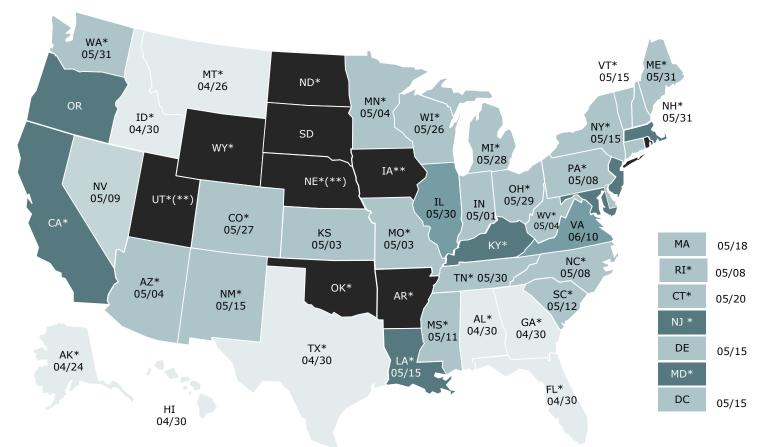
^{*} Coalition has not been formally announced

Sources: Axios, MI Governor's Office, Politico.

When state shelter-in-place orders and stay-at-home advisories expire

AS OF MAY 7, 2020, CNN

■ April ■ May ■ June ■ No set end date ■ No statewide shelter-in-place order or stay-at-home advisory



^{*}State has allowed or plans to allow certain non-essential businesses to open early

Sources: CNN.

**State has no shelter-in-place order or stay-at-at-home advisory but has closed non-essential businesses

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COVID-19 has spurred major oil-market disruptions



The outbreak of coronavirus has led to a collapse in oil demand; differences in opinion over how to approach depressed demand led to the disintegration of a long-standing production cooperation agreement between Russia and Saudi Arabia



Background information

- Russia is not a member of the Organization of Petroleum Exporting Countries (OPEC) but had a deal to collaborate with OPEC, known as OPEC+
- The Russians and Saudis had up until recently been in an important alliance meant to counter the impact of the US shale boom
- However, the American oil industry has remained competitive, and Russia and Saudi Arabia have become reliant on selling cheap oil to China, which needed access to low-price crude oil during its 2015-2016 mini-recession



Cause of the oil war

- In an OPEC meeting a week prior to the open hostilities between the two nations, Saudi Arabia proposed a cut in oil production of 1.5 million barrels per day to offset falling demand due to COVID-19; this would prevent the price of oil from falling further
- Russia refused, reportedly hoping to flood the market in order to drive prices down and damage US oil producers
- Saudi Arabia responded to Russia's refusal by going further than Russia and driving prices even lower than Russia was willing to go



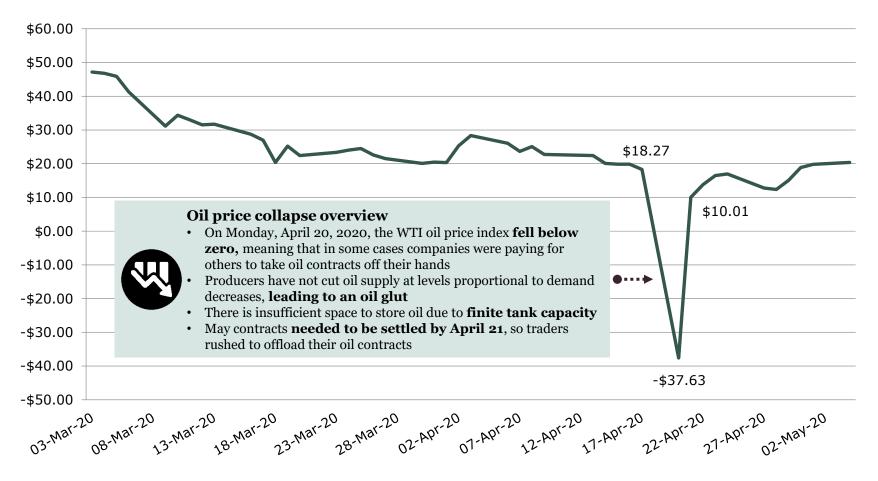
Impact and response

- The stock market had its worst day since 2008; stock indexes plunged so rapidly that trading had to be temporarily halted
- Congress considered including, but ultimately excluded, oil purchases for the Strategic Petroleum Reserve in its COVID-19 phase 3 stimulus package
- In April 2020, OPEC+ reached a deal to cut production of oil by 9.7 million barrels each day

Sources: Vox, The New York Times, NPR, The Guardian, MarketWatch, AgWeb, The Hill, Axios.

On April 20, 2020, one oil price index dipped into negative territory due to falling demand and insufficient storage

West Texas Intermediate (WTI) oil price index in US dollars, 3/2/2020 - 5/4/2020



Sources: Markets Insider, The New York Times.