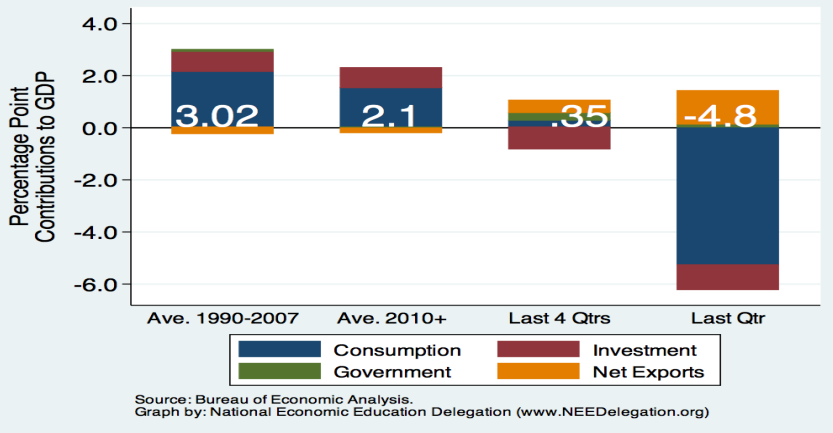


COVID-19: Economic Implications and Policy Response

Scott L. Baier
Clemson University
and
National Economic Education Delegation

1

GDP 2020:Q1



Contributions from different expenditure components :

- Consumption: -5.26
- Investment: -0.96
- Government: 0.13
- Net Exports: 1.30

Note: The economic impact of COVID-19 probably only impacted the last two to three weeks of 2020:Q1 GDP

2

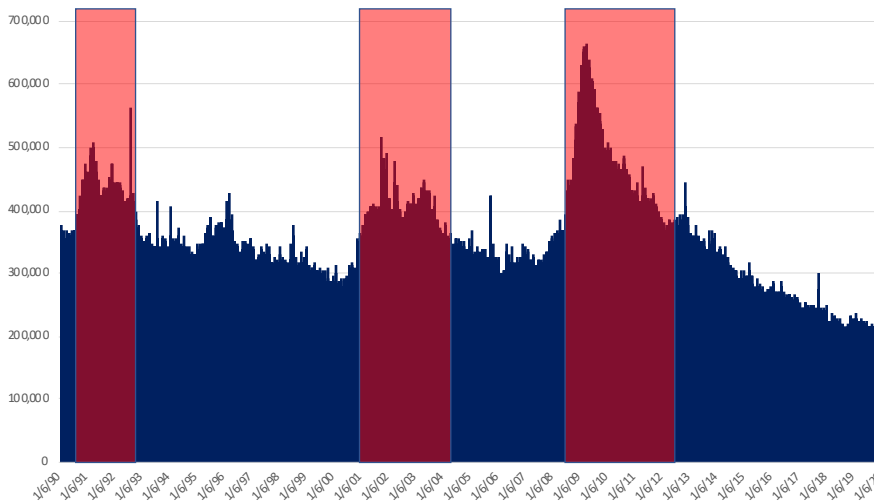
The Initial Economic Effects(?)



3

Weekly Unemployment Claims

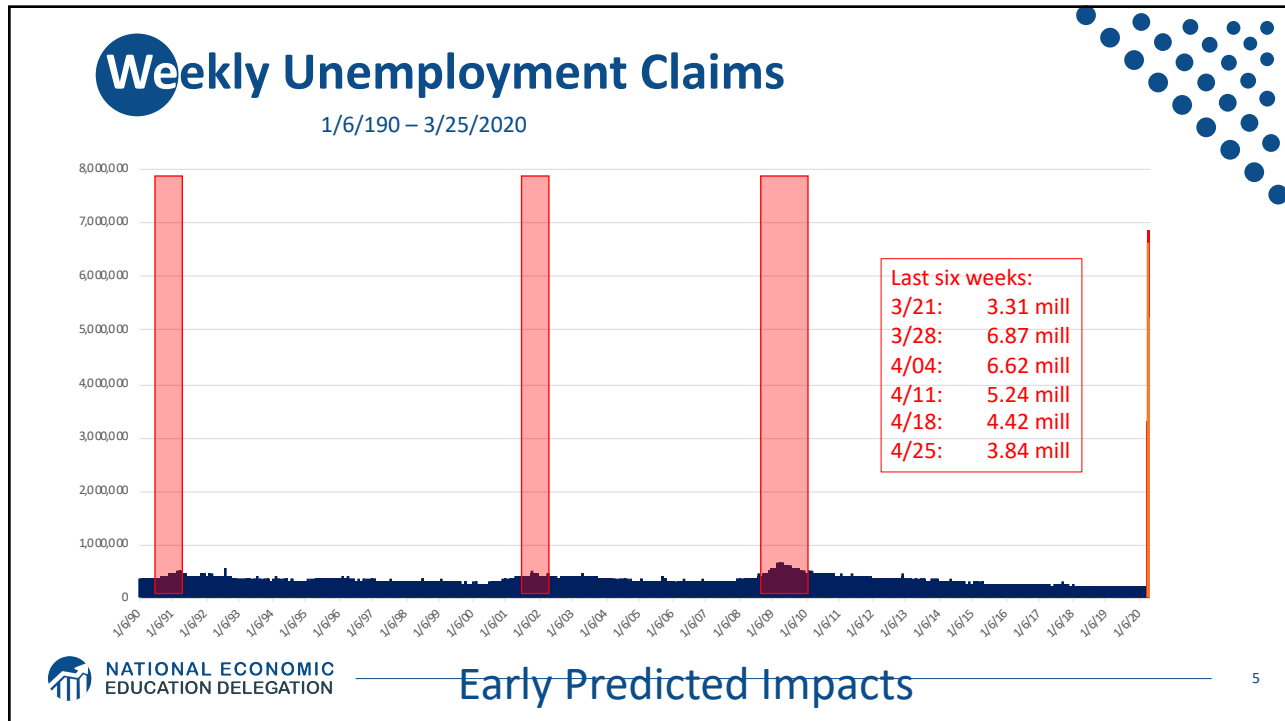
1/6/190 – 3/14/2020



When the economy is doing well, initial claims for unemployment average about 280,000 to 340,000.

During recessions, initial claims typically increase to about 400,000 --the biggest increase had 665,000.

4



5

COVID-19 and the Economy

- **Initially, it was believed that COVID-19 would only have modest impacts on the US and World Economies.**
- **What changed?**
- **Flattening the COVID-19 and Deepening the Recession**
- **Policy response**
- **Growth Projections**

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Early COVID-19 Timeline

Dec 31	Jan 20	Jan 31	Feb 9	Feb 11
First case detected In Hubei Province	First case outside China (Thailand, Japan, and South Korea)	White House limits International travel	Death toll in Mainland China exceeds SARS	WHO names new coronavirus COVID-19

At this point, most believed that the coronavirus would largely be contained within a few countries.

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Coronavirus: Supply Chains

Countries	Share of World GDP	Manufacturing as a Share of GDP	Services as a Share of GDP
United States	24%	11%	77.4%
Canada	2%	10%	66.7%
UK	3%	9%	71.0%
Germany	5%	20%	61.8%
France	3%	10%	70.3%
Italy	2%	15%	66.3%
Spain	2%	11%	67.7%
Japan	6%	21%	69.1%
China	16%	29%	52.2%

If contained, COVID-19 would mainly disrupt manufacturing supply chains.

The more a country's manufacturing relied on these supply chains the bigger the impact on GDP.

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Coronavirus: Supply Chains

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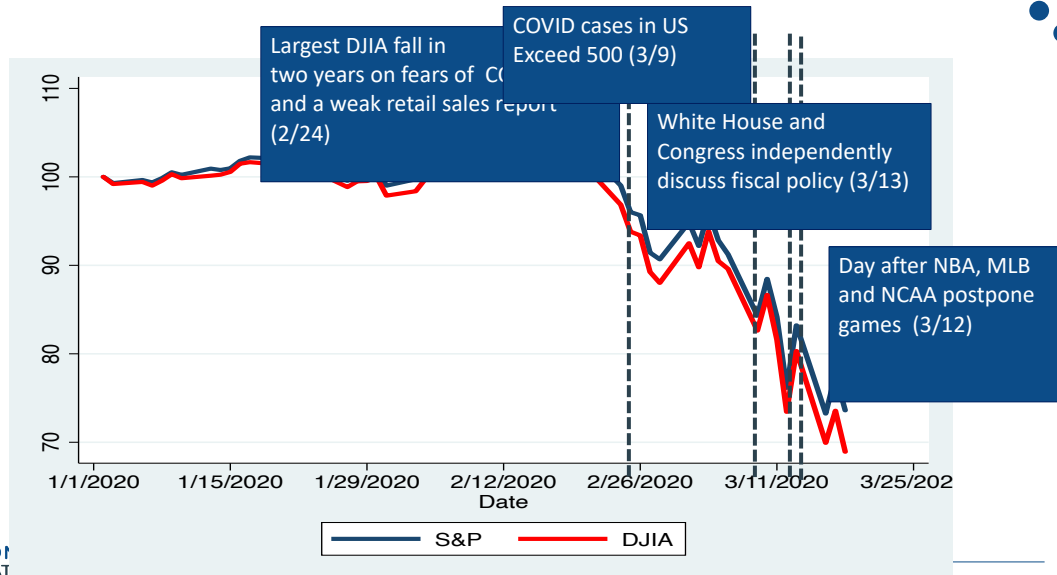
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The more a country's manufacturing relied on these supply chains the bigger the impact on GDP.

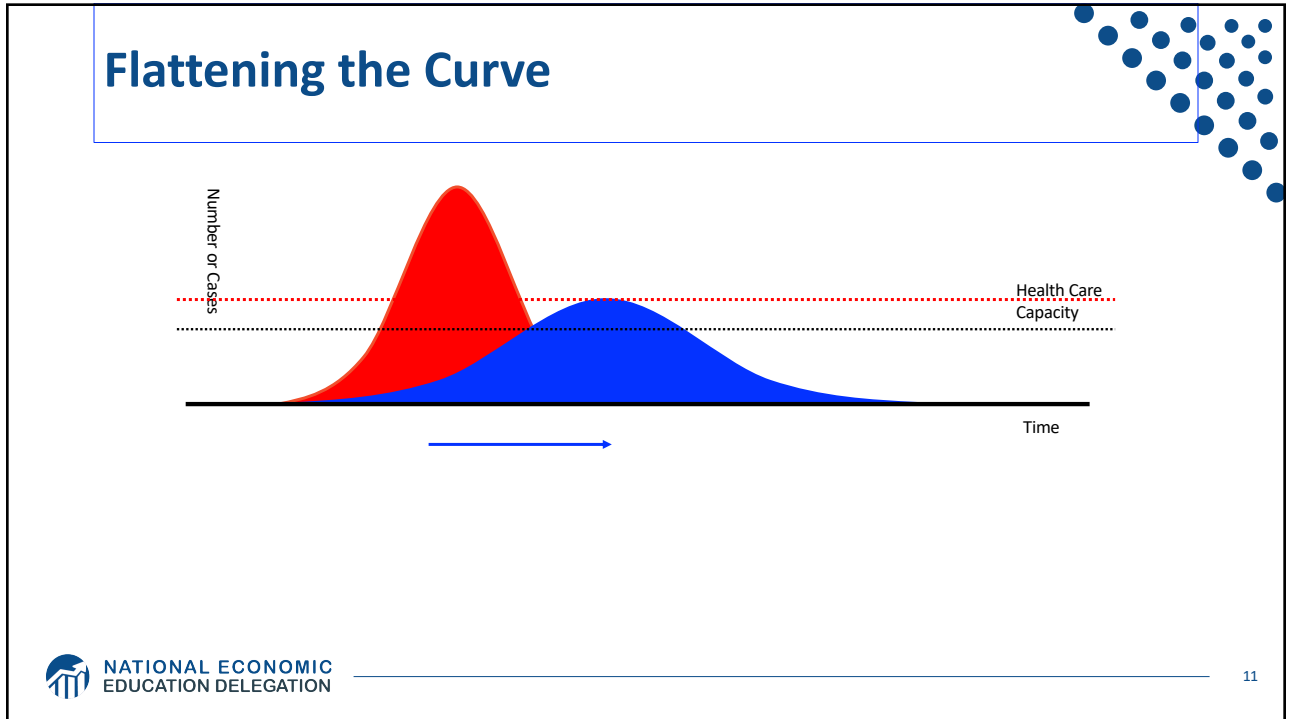
If limited to supply chain effects, COVID-19 was likely to be to slow GDP by 0.25 to 0.50 from its baseline prediction – say from 2.5 to 2%

9

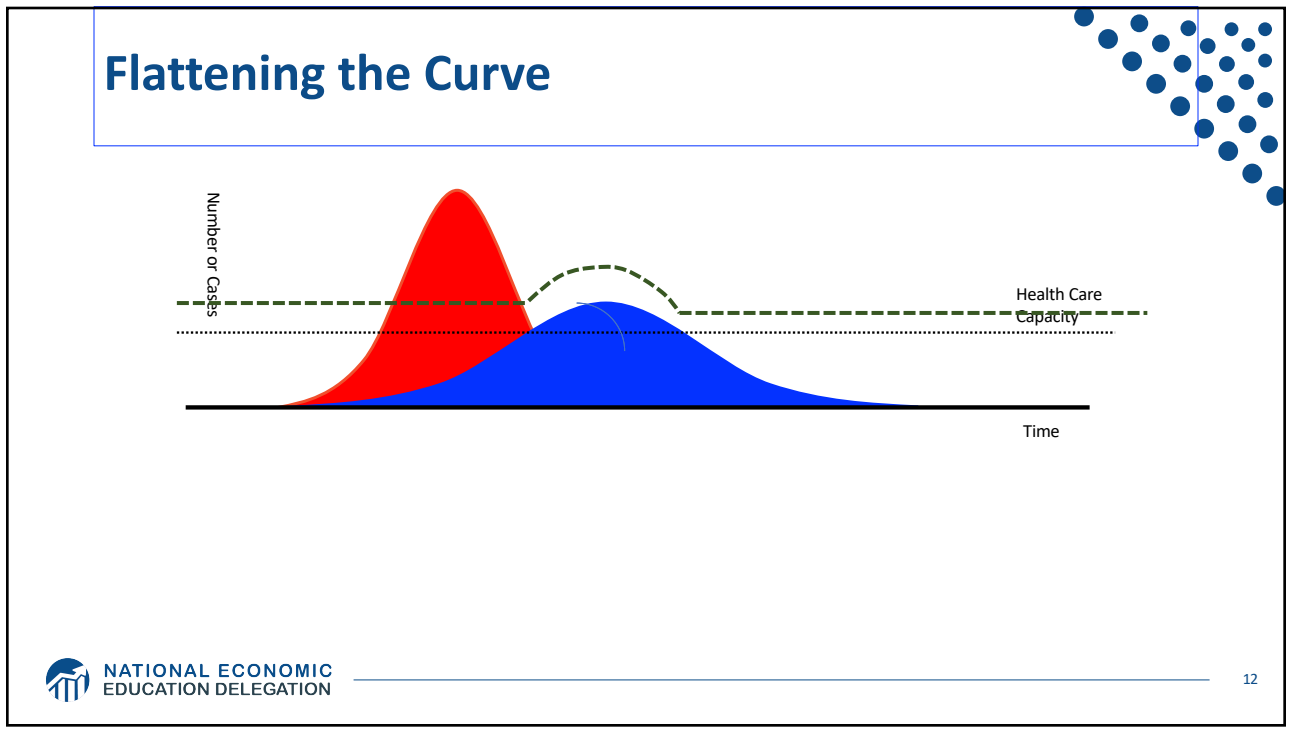
Dow Jones and S&P 500



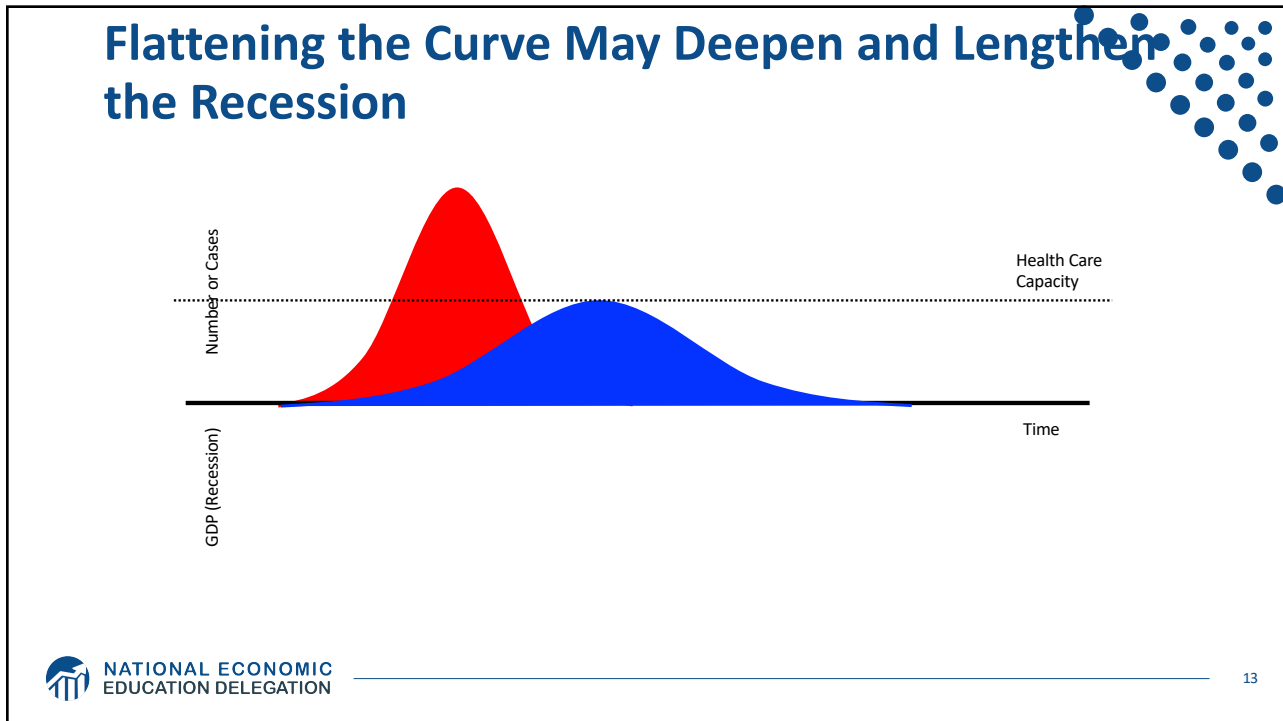
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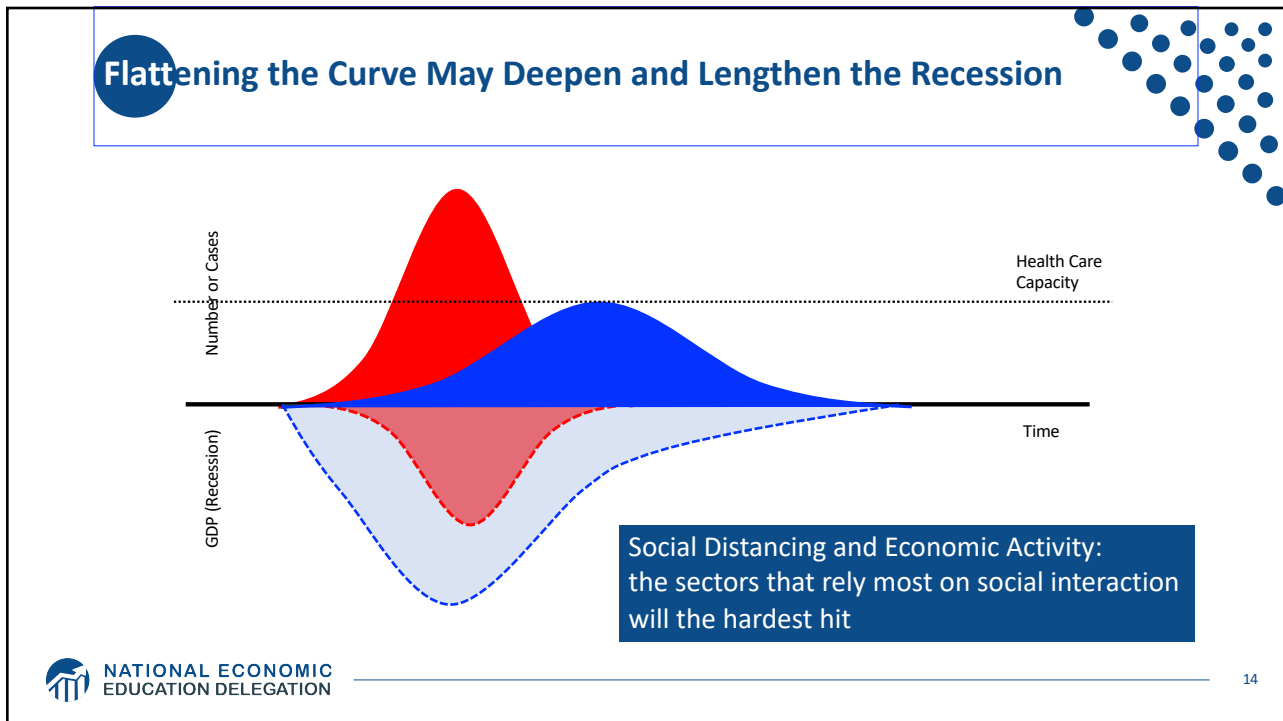
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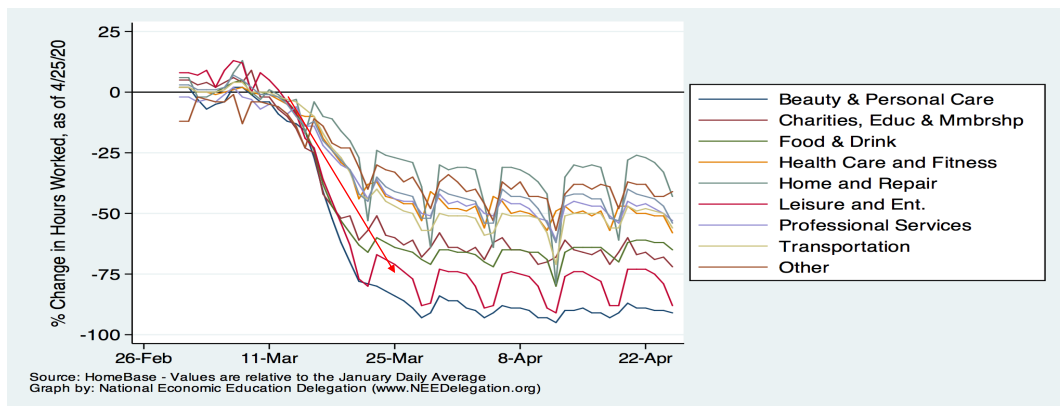
GDP and Sudden Demand Stops

Countries	Share of World GDP	Manufacturing as a Share of GDP	Services as a Share of GDP
United States	24%	11%	77.4%
Canada	2%	10%	66.7%
UK	3%	9%	71.0%
Germany	5%	20%	61.8%
France	3%	10%	70.3%
Italy	2%	15%	66.3%
Spain	2%	11%	67.7%
Japan	6%	21%	69.1%
China	16%	29%	52.2%

The most vulnerable industries include entertainment, food, recreation, health and beauty, education, social assistance and manufacturing. These industries account for more than 50% of GDP.



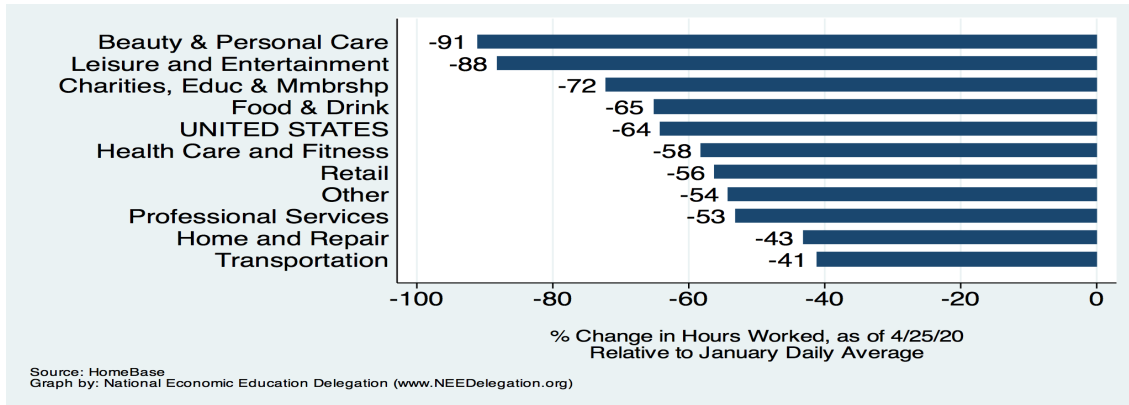
Percent Change Hours Worked



Data Source: Homebase

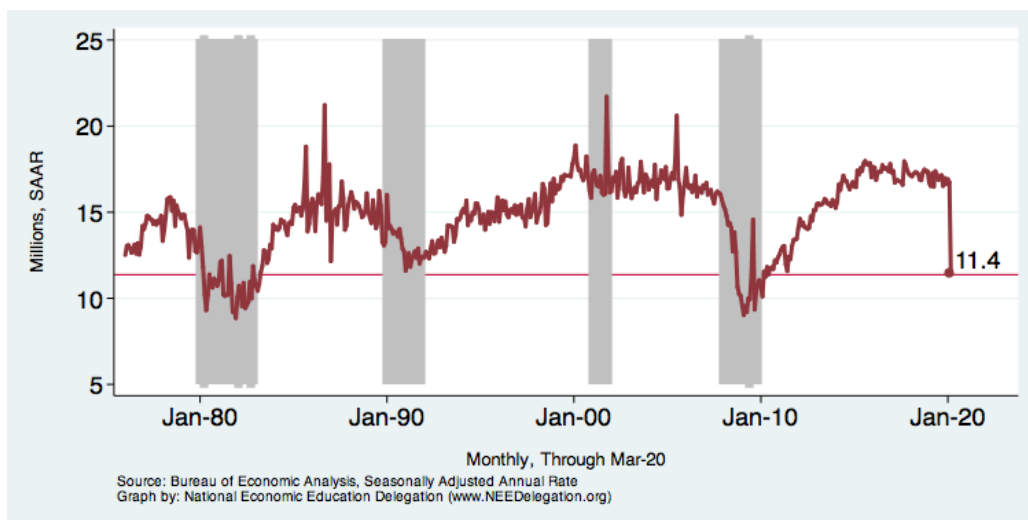


Percent Change Hours Worked



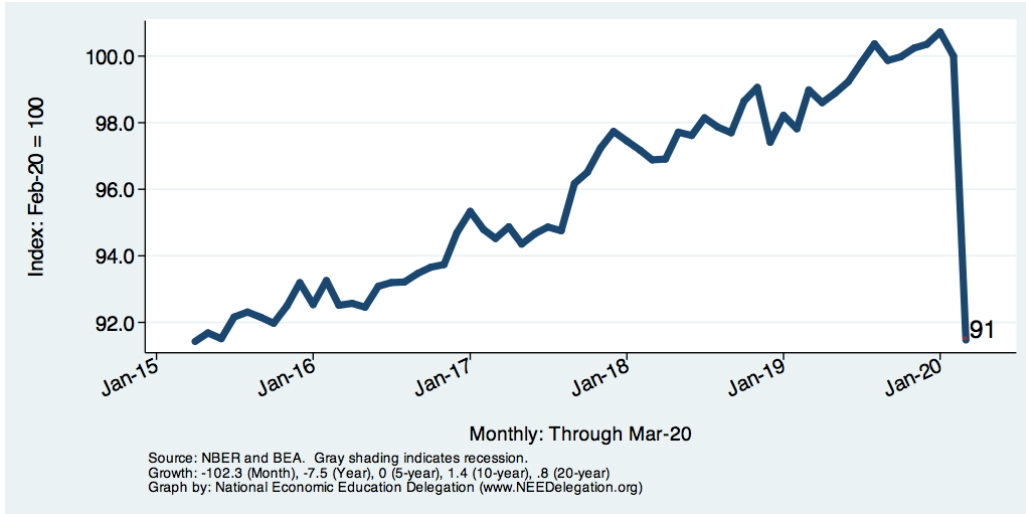
17

Automobile and Light Truck Sales

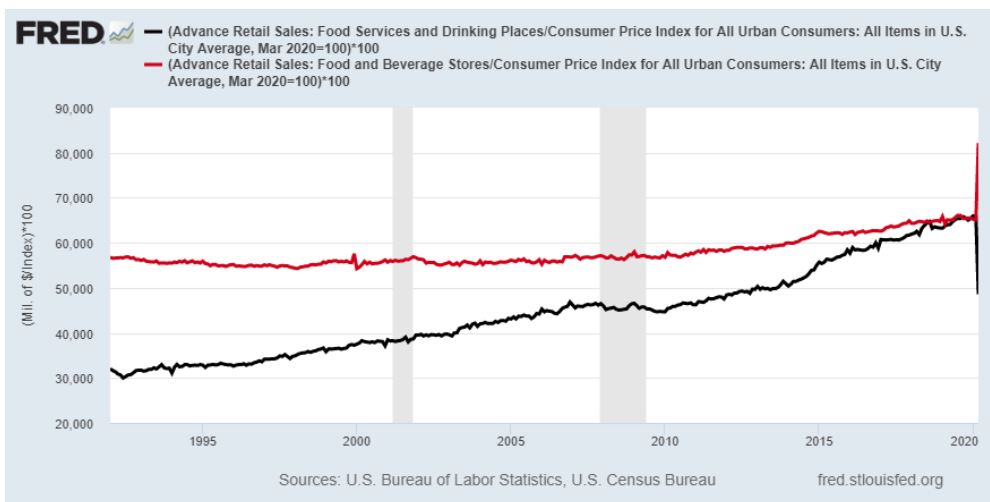


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Retail Sales



Food: Grocery versus Restaurants



GDP Shares and Impact of COVID-19

Countries	Share of World GDP	Manufacturing as a Share of GDP	Services as a Share of GDP	Confirmed Cases	Deaths
United States	24%	11%	77.4%	667,572	33,903
Canada	2%	10%	66.7%	29,925	1,191
UK	3%	9%	71.0%	103,093	13,729
Germany	5%	20%	61.8%	135,663	3,867
France	3%	10%	70.3%	147,683	17,920
Italy	2%	15%	66.3%	168,941	22,170
Spain	2%	11%	67.7%	182,816	19,130
Japan	6%	21%	69.1%	8,626	178
China	16%	29%	52.2%	82,341	3,342

Source: World Bank, Johns Hopkins Coronavirus Resource Center, Worldometer

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GDP Shares and Impact of COVID-19

Countries	Share of World GDP	Manufacturing as a Share of GDP	Services as a Share of GDP	Confirmed Cases	Deaths	GDP Growth
United States	24%	11%	77.4%	1,054,166	61,009	-5.9
Canada	2%	10%	66.7%	51,231	2,984	-6.2
UK	3%	9%	71.0%	165,221	26,097	-6.5
Germany	5%	20%	61.8%	161,173	6,399	-7.0
France	3%	10%	70.3%	167,518	24,087	-7.2
Italy	2%	15%	66.3%	203,591	27,682	-9.1
Spain	2%	11%	67.7%	236,899	24,275	-8.0
Japan	6%	21%	69.1%	13,736	394	-5.2
China	16%	29%	52.2%	82,858	4,633	1.2

US GDP growth in
2009 -2.54%

Source: World Bank, Johns Hopkins Coronavirus Resource Center, Worldometer

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Cost Benefit Analysis: Tradeoffs

• **No containment policies**

- Reduced economic activity
- **More** coronavirus deaths
- Non-coronavirus deaths

• **Stringent containment policies**

- **Dramatically** reduced economic activity
- **Fewer** coronavirus deaths
- Non-coronavirus deaths(?)

???

Analysis of Containment Policies

Reduced economic activity < value of additional deaths

Complicated equation – both numerically and philosophically

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BOTE Cost Benefit Analysis

BOTE: Back Of The Envelope

- **BENEFITS of social distancing:**
 - \$7 million/life and 600,000 lives saved (\$4.2 trillion)
 - Long term health issues avoided: 2 million at \$500,000 (\$1 trillion)
 - **Total Benefit of Social Distancing: \$5.2 Trillion**
- **COSTS of “Shelter in Place” or “Lockdown”**
 - There are about 70+ workdays in a quarter (plus March).
 - **The cost of a “lockdown” is roughly \$1.3 Trillion**

Benefit: \$5.2 trillion > Cost: \$1.3 trillion

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<https://twitter.com/BetseyStevenson/status/1242180499566669828>

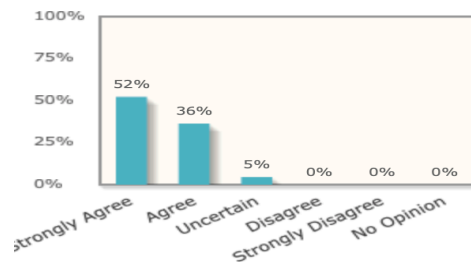
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University of Chicago – Experts Poll

Policy for the COVID-19 Crisis

Question A: A comprehensive policy response to the coronavirus will involve tolerating a very large contraction in economic activity until the spread of infections has dropped significantly.

Responses



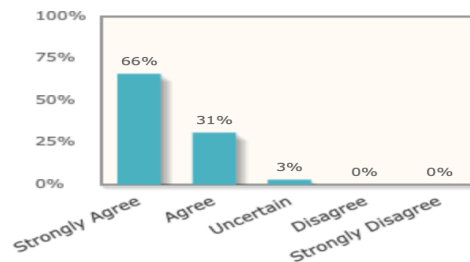
© 2020. Initiative on Global Markets.

Source: IGM Economic Experts Panel
www.igmchicago.org/igm-economic-experts-panel



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Responses weighted by each expert's confidence



© 2020. Initiative on Global Markets.

Source: IGM Economic Experts Panel
www.igmchicago.org/igm-economic-experts-panel

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Government Response: This Shock is Different

- **This economic shock is a “health shock” with externalities that have (large) macroeconomic consequences.**
- **The fiscal and monetary response is not one where we can or should think about Keynesian versus Classical Solutions.**
- **Response should be to target the cause of the problem and provide income support for individuals and some financial support for firms.**
 - Cause of the problem is COVID-19 and its contagion.
 - Social distancing reducing income and production
 - (We hope) The economic shock is not structural and on the “other side”. We hope that structurally things will be the same; therefore, we would like to preserve employment-employer matches.



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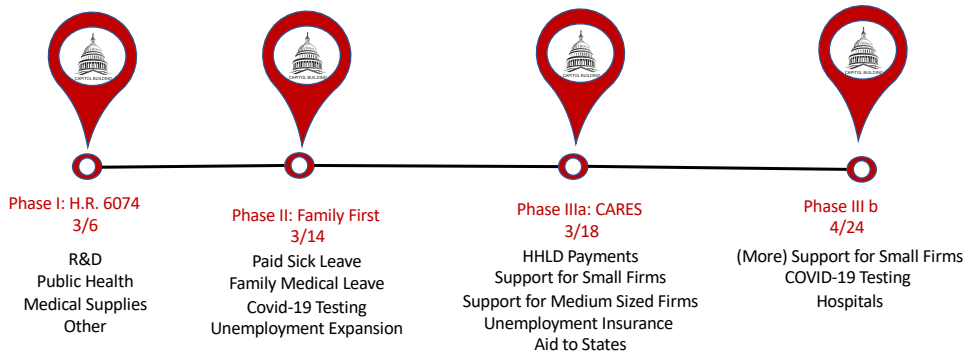
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Government Response: Fiscal Response

- Respond to the impacted sector(s) – health crisis,
- Provide income support for the lower income and most vulnerable,
- Provide support to maintain employer - employee matches, and
- Provide support for the sectors that are most exposed to the shock.

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Fiscal Policy Timeline



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Government Response (Phase 2): Family First (H.R. 6201)

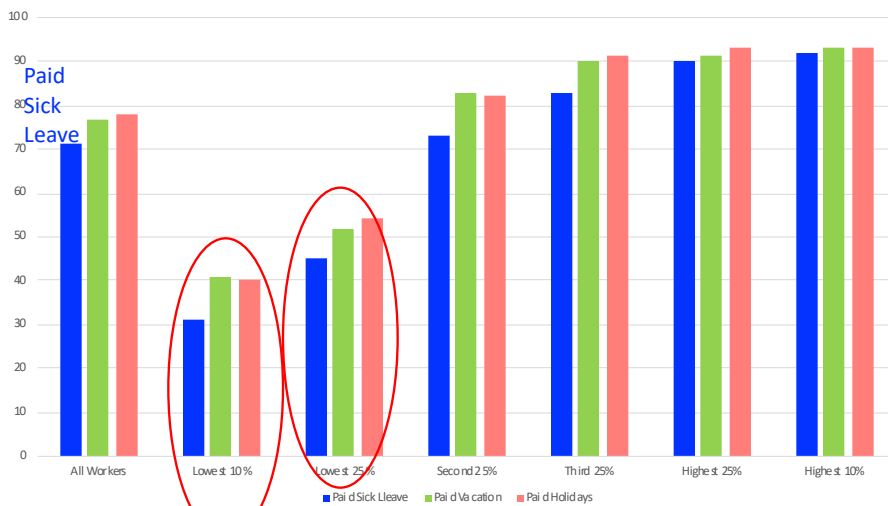
- Free testing for anyone whose doctor recommends it
- Expand family and medical leave
- Paid emergency sick leave
- Additional employment benefits

Clearly this is designed to increase testing and support social distancing and (self) quarantines

Food assistance: Supplemental Nutrition Assistance Program (SNAP) and Home-Delivered Nutritional Services

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Paid Leave by Income Category



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Fiscal Response: CARES Act (H.R. 748)

- **Direct payment to households \$1,200 for every adult and \$500 for every child – similar to the 2008 rebate but purpose is different.**
- **Small business loans (Paycheck Protection Program)-- \$350 billion**
 - <500 employees and designed to cover six (6) weeks of payroll.
- **Economic Stabilization Fund (Main Street Lending Program) – \$500bn**
 - for medium sized firms,
 - state and local municipalities, and
 - passenger and cargo air carriers, and firms maintaining national security.
- **Expand unemployment benefits**



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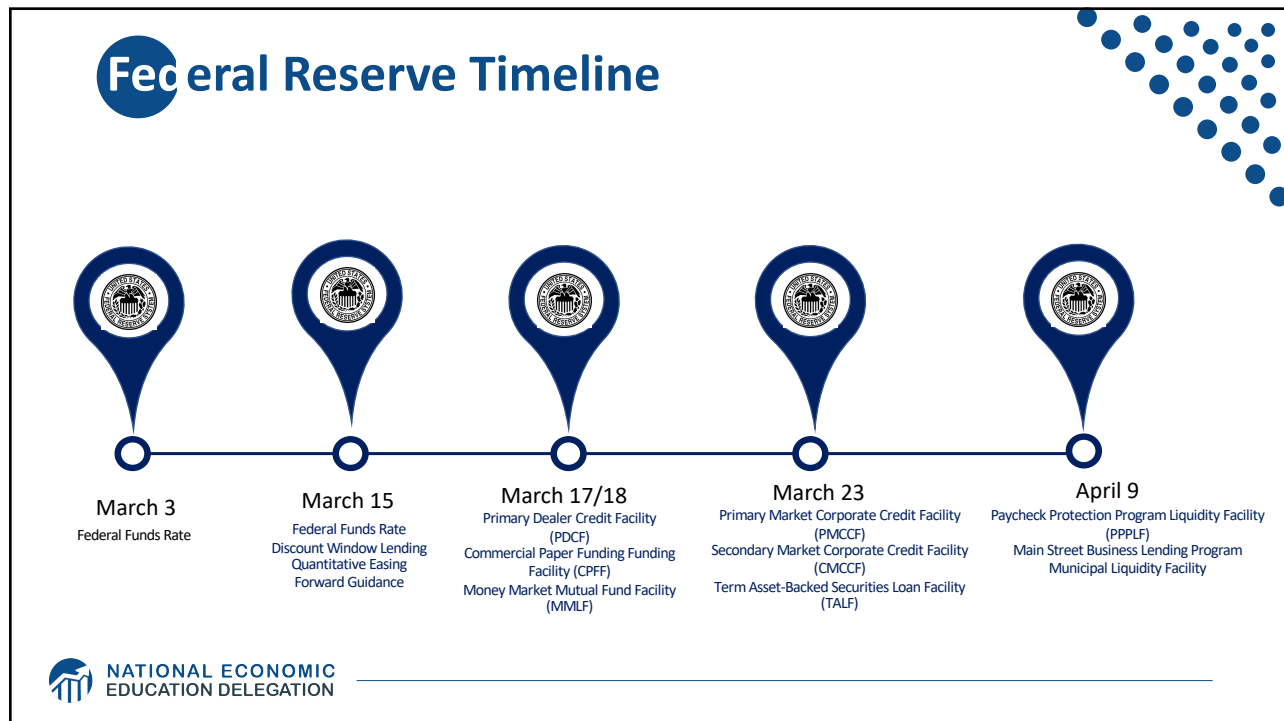
PPP Major Recipients By Industry

Industry	Amount (Billions)	Percent of Loans
Construction	\$44.9	13.1
Professional, Technical and Scientific, Services	\$43.3	12.7
Manufacturing	\$40.9	12.0
Health Care and Social Assistance	\$39.9	11.7
Accommodation and Food Service	\$30.5	8.9
Retail Trade	\$29.4	8.6
Wholesale Trade	\$19.5	5.7

These seven (7) industries account for nearly 75% of the PPP loans



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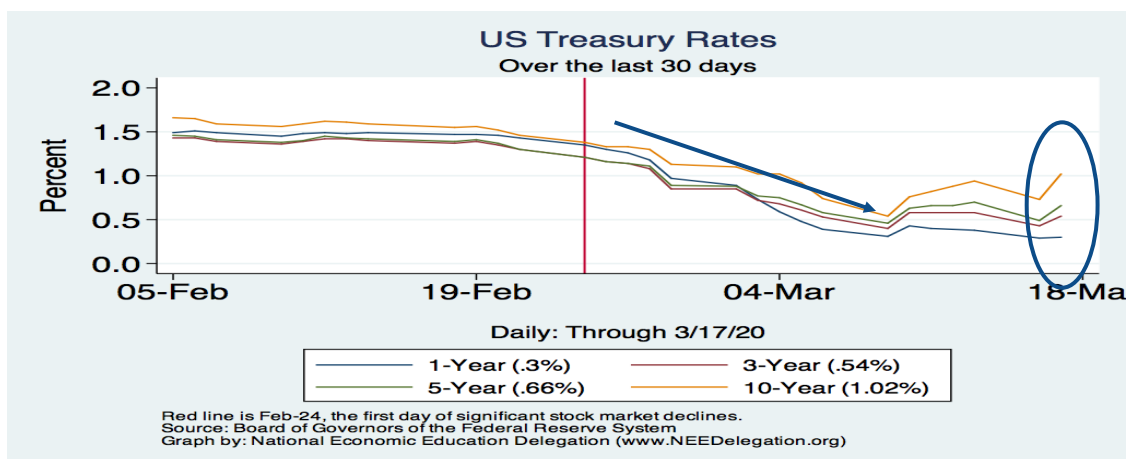
Federal Reserve: Standard Operations

- **Federal Funds Rate:** The Federal Reserve lowered the targeted Federal funds rate on March 3 and again on March 15 moving the targeted Federal Funds rate to zero.
- **Discount Window Lending:** Lowered the interest rate it charges banks to borrow from 1.75% to 0.25%.
- **Reserve Requirement:** Lowered the reserve requirement to zero.
- **Forward Guidance:** Honed during the Great Recession the Fed tries to set market expectations on the time path of interest rates over time.

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US Treasury Rates: A Safe Haven?



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Federal Reserve: Ensure Financial Market Stability

- In mid-March, Treasury and Mortgage Backed Securities markets began behaving irregularly as the demand for liquidity increased.
 - **Securities Purchases (Quantitative Easing):** Fed Response: purchase treasuries and mortgage backed securities (3/15).
 - Re-launched the **Primary Dealer Credit Facility (PDCF)** in order “smooth market functioning and facilitate the availability of credit to businesses and households (3/17).
 - Re-instituted the **Money Market Mutual Fund Liquidity Facility (MMLF)** to “assist money market mutual funds in meeting demands for redemptions by households and investors enhancing overall market function and credit provision to the *broader economy*.”
 - Increased liquidity in the **repo market**. The repo market is where firms borrow and lend cash and short-term securities. The Fed was offering \$100 billion in overnight loans and \$20 billion in two-week loans.
 - o The Fed increased the offerings to \$1 trillion (from \$100 bn) in overnight repos, and
 - o \$500 billion in one month **and** three-month repos (from \$20bn 2/wks).

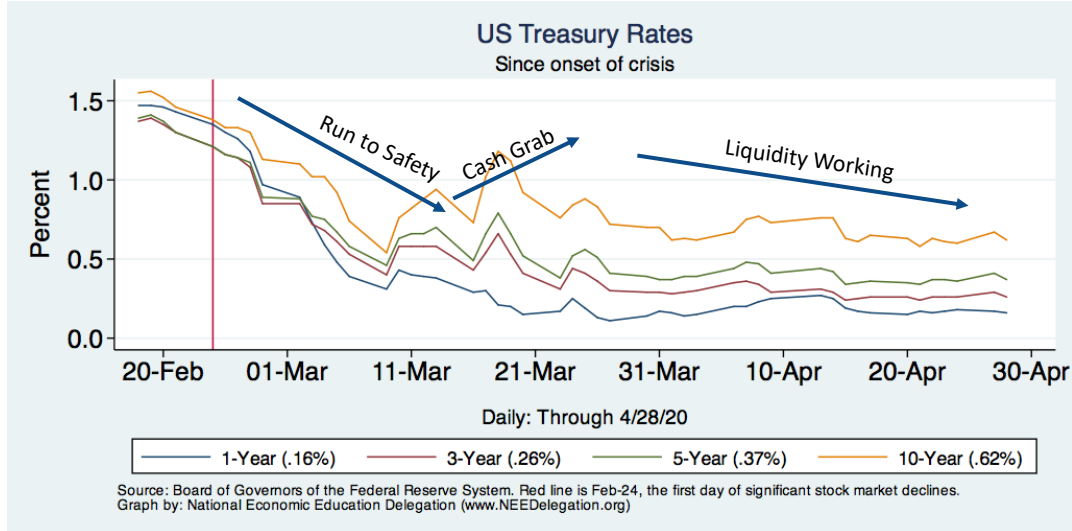


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US Treasury Rates: A Safe Haven?



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Federal Reserve: Support Corporations and Business

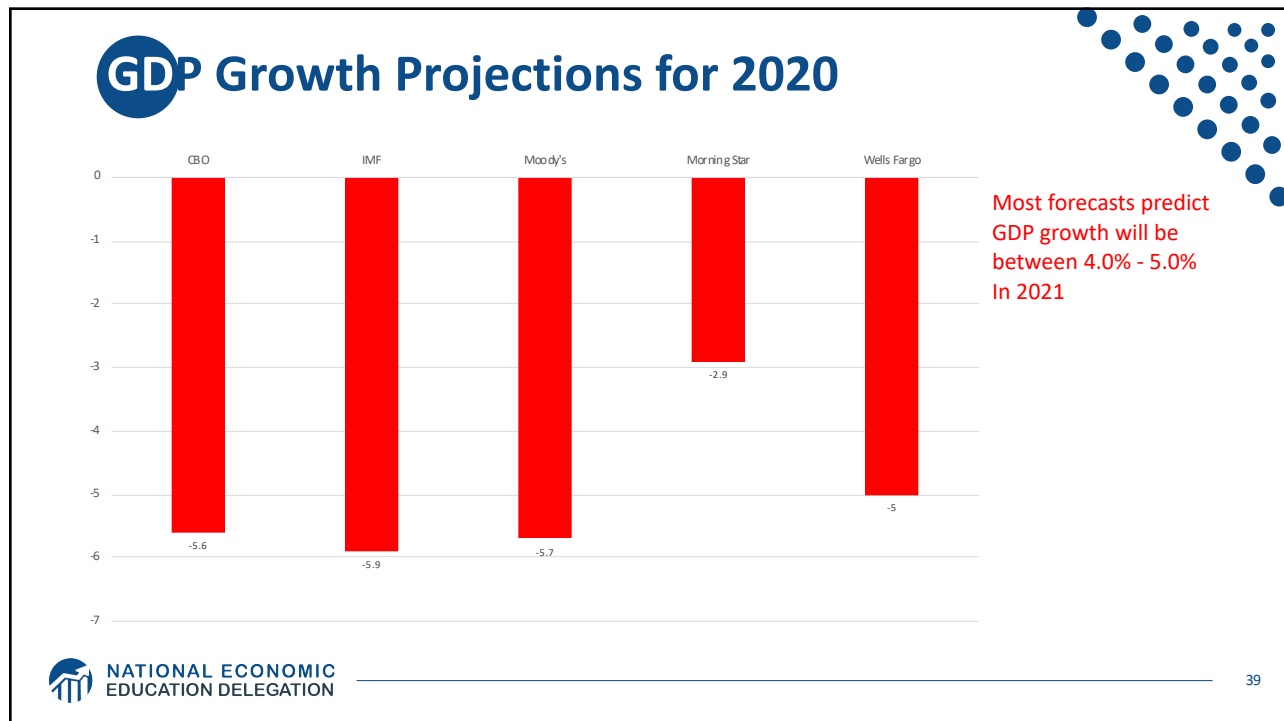
- Created the **Primary Market Corporate Credit Facility (PMCF)** allows the Fed to lend directly to corporations by buying new bond issuances and providing loans (3/17).
- Instituted the **Commercial Paper Funding Facility (CPFF)** the Fed can purchase commercial paper from firms at a given interest rate – effectively, the Fed is lending directly to firms. (3/17)
- **Main Street (Expanded) Loan Facility:** Through the CARES Act these two programs offer four-year loans to US businesses with up to 10,000 employees or revenues less than \$2.5 billion. (4/9)
- **Paycheck Protection Program Facility:** Facilitates loans under the Small Business Administration Paycheck Protection Program



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Unemployment Projections

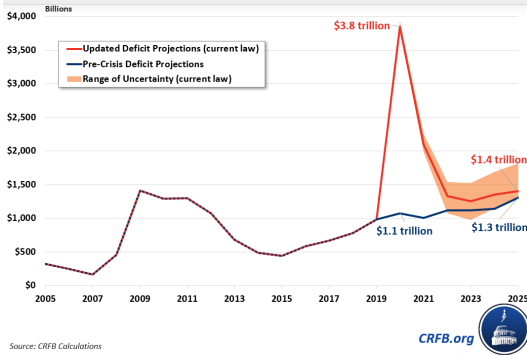
- Mining, retail, transportation, arts and entertainment, hotels and restaurants, and misc. services account for only 15% of GDP, but roughly 30% of employment.
- We anticipate COVID-19 reduces GDP growth by 7% from its baseline forecast.
- It is likely that 60 percent of the decline in GDP is due to these sensitive sectors.
- Therefore, we might expect unemployment to increase from 3.5% to 8.5% from these sectors alone and the overall unemployment rate may reach 11.0-13% by year's end.

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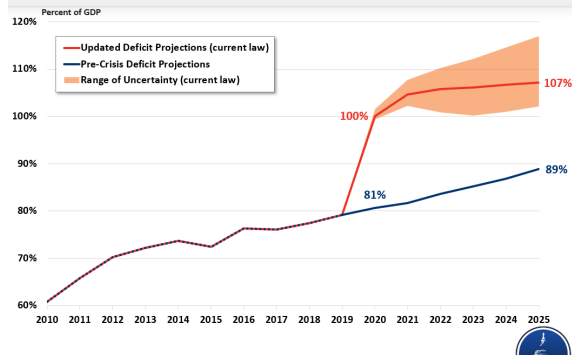
Federal Budget Implications

Federal Deficit Will Reach Record Levels



Deficit may be nearly 20% of GDP

Debt Will Equal Size of Economy This Year



Debt will likely equal GDP this year

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Opening the Economy

- **Concerns about opening the economy too soon and we have another outbreak.**
 - Question: What was the purpose of social distancing?
 - Is it so the health care system is not overwhelmed?
 - Is it to "eradicate" COVID-19?
 - Is it someplace in between
- **How much pent-up demand is out there?**
 - States can be "open for business"
 - It does not mean businesses will be open
 - It does not mean consumers will come back

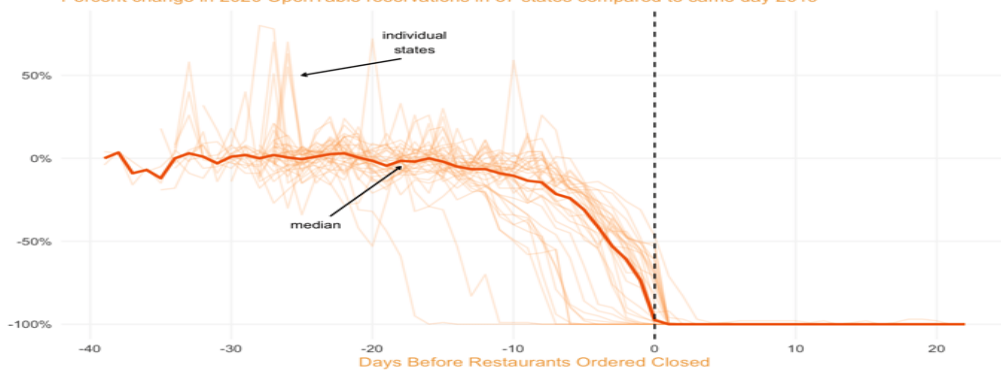
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Other Events Canceled

- March 6 — SXSW canceled
- March 10 — Ivy League cancels its basketball tournament
- March 11 — March Madness will be played without fans
- March 12 — March Madness canceled
- March 12 — Cato Institute and Brookings Institution shift to mandatory telework
- March 13 — Masters and Boston Marathon postponed
- March 15 — CDC recommends cancellation of events involving 50+ people
- March 16 — Kentucky Derby postponed
- March 19 — California becomes the first state to issue a stay-home and business-closing order
- Early March: Clemson University began discussions of our contingency plans and canceling “non-essential” events that could potentially put individuals at risk.

Reservations: Open Table

The Day Before Closures, Restaurant Reservations Had Fallen 73 Percent on Average
Percent change in 2020 OpenTable reservations in 37 states compared to same day 2019



Conclusion

- COVID-19 is health crisis that has macroeconomic implications.
- The macroeconomic effects that have impacted both the supply and demand.
- GDP will likely contract between 5.0 and 6.0 percent this year.
- Positive growth will likely return in 2021 as long as there are preventative medicines and treatments.
- No easy answers – trade-offs are between bad outcomes.
- How do we plan for the next pandemic?
- Find the silver lining.



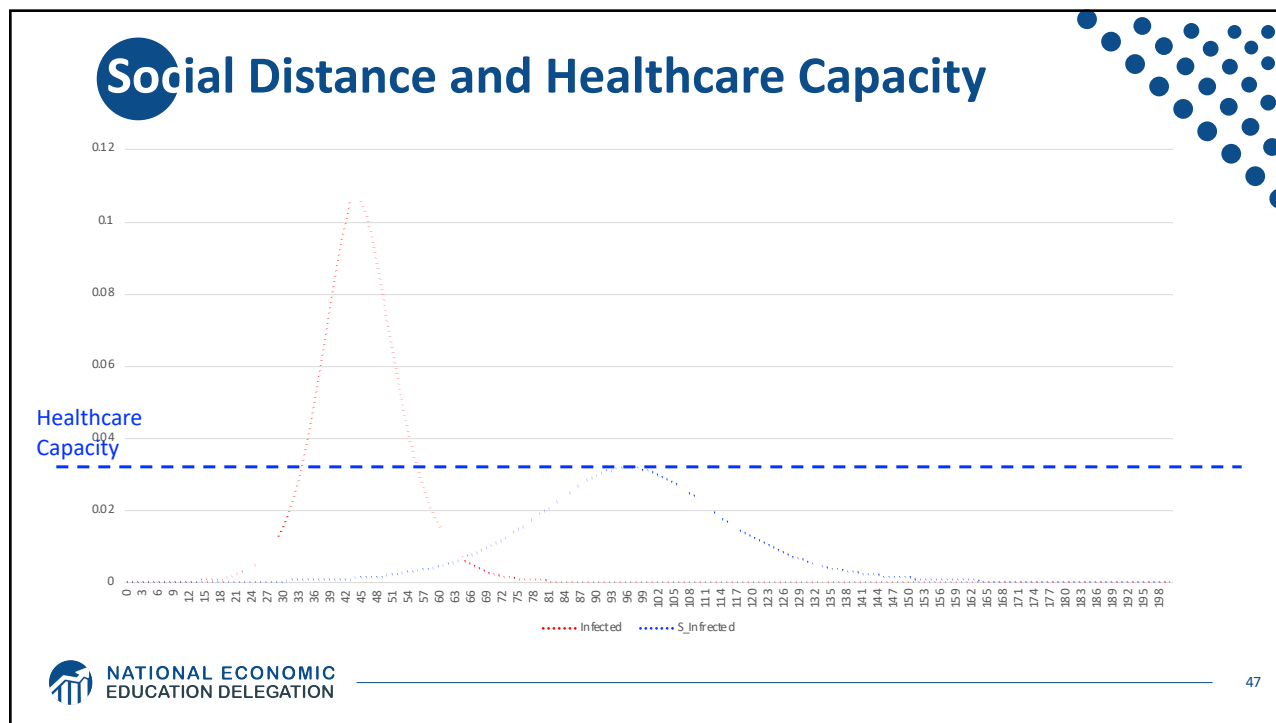
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What is Next?

- **Key:** Depends on the progress made on testing and treatment
- Depends on flattening the curve and society's view of trade-offs



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Federal Reserve: Other Support

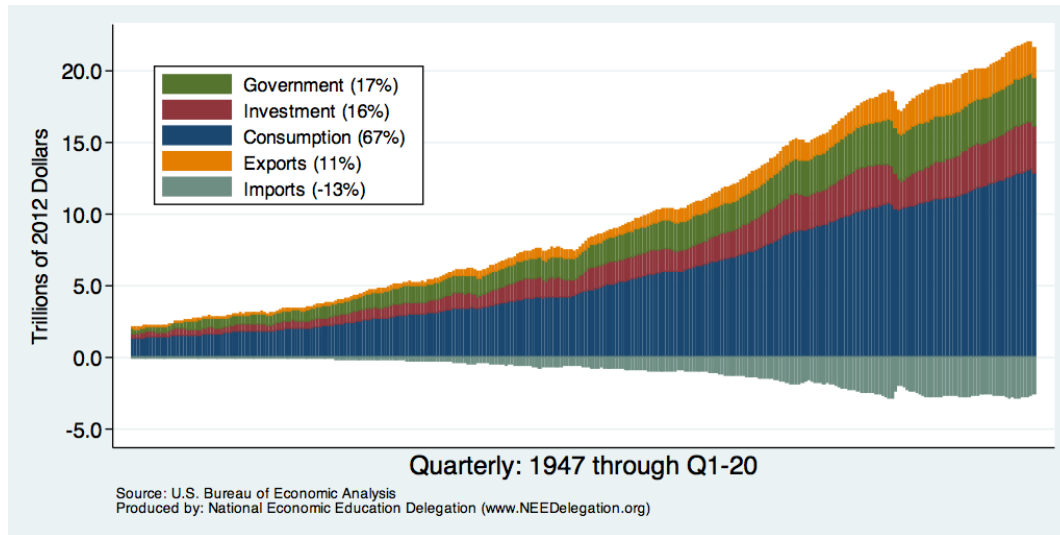
- **Support for Households and Consumers:**
 - Re-instituted Term Asset-Backed Securities Loan Facility (TALF) by which the Fed lends to holders of asset backed securities that are collateralized by new loans. Extended this program to include existing commercial mortgage-backed securities and newly issued collateralized debt obligations.

- **Support for States and Municipalities**
 - The municipal bond market exhibited signs of stress in March it was becoming increasingly hard to borrow in the Muni-market. The Fed created the Municipal Lending Facility to lend directly to state and local governments.
 - Also expanded eligible collateral to include municipal debt in the MMLF and CPFF market.

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Composition of Real GDP



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What is Next?

- **Key:** Depends on the progress made on testing and treatment
- Depends on flattening the curve and society's view of trade-offs
- "Opening Back Up" will likely need Federal and State guidelines and likely to vary across region.
- Private sector will factor into determining how the economy opens back up



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What have we learned? Positive Take-Aways

- **May improve enhance the delivery of some services**
- **Encourage firms, households, governments to have a business continuity plan.**
- **In an integrated world, this will likely not be the last pandemic...**
 - Improve social insurance for these types of events
 - Allow more flexibility to governments and firms to respond



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Private Sector Response

- **Some firms have committed to maintain employment and continue to pay hourly workers.**
- **Some firms and individuals have committed to use resources to help support the health crisis.**



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What is next and what else can be done?

- **How do we pay for it?**

- Run larger deficits
- Run the printing press MMT
- Firms and/or individuals borrow through Treasury (Cochrane)

- **Additional fiscal measures**

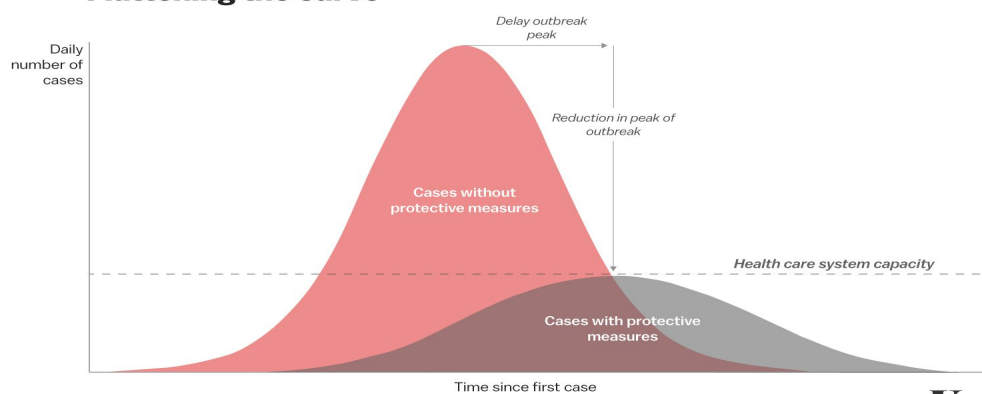
- Buyer of last resort (Piketty and Zucman)
- Employer of last resort (MMT)

- **Additional cash disbursements**



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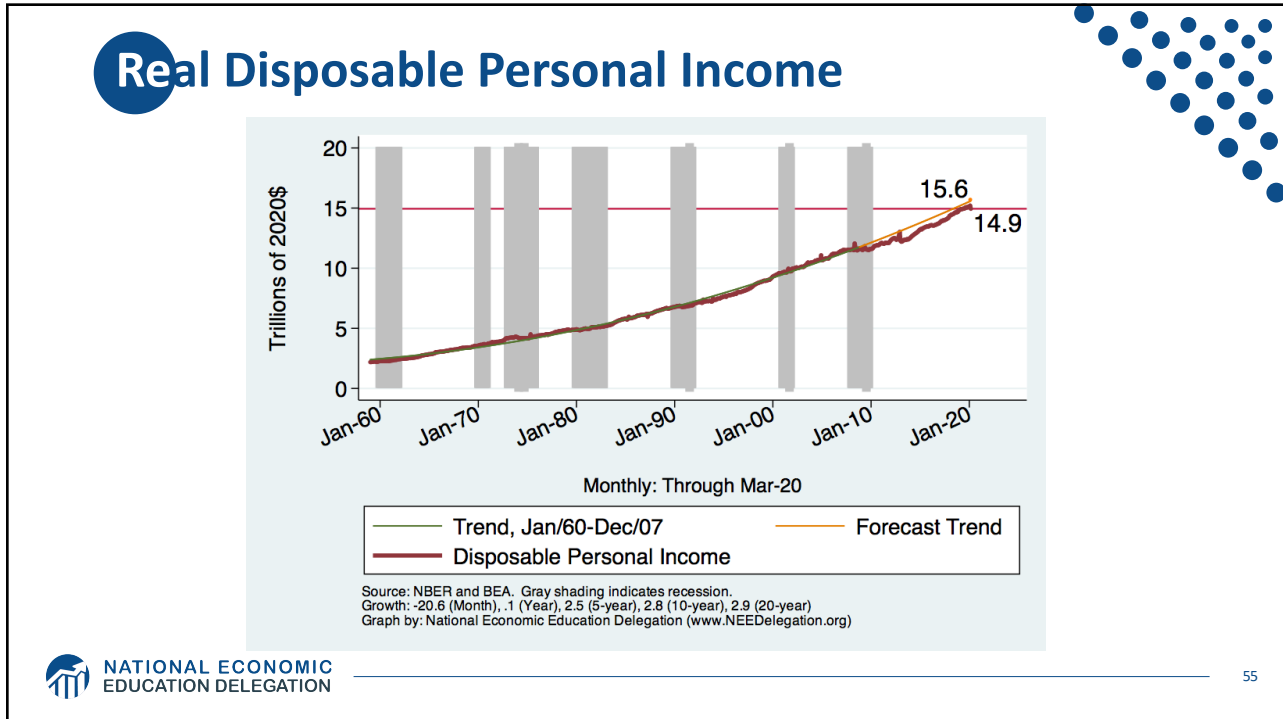
Flattening the curve



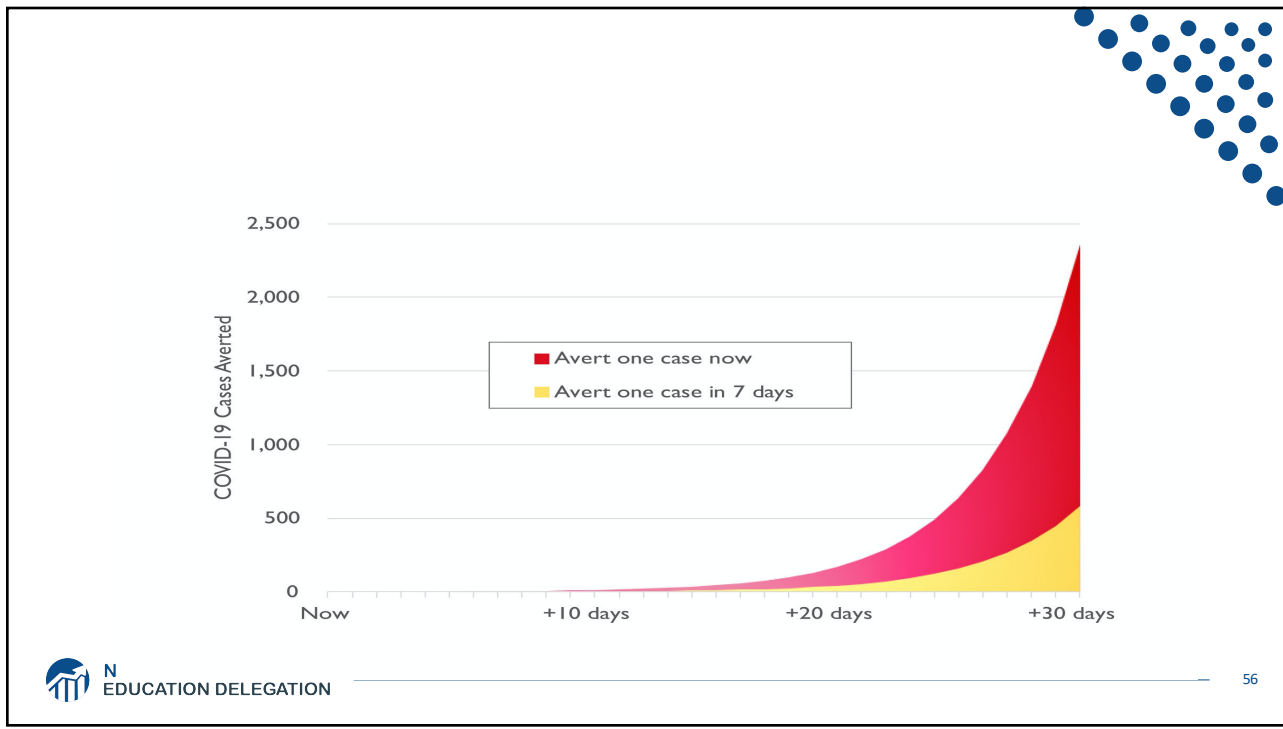
Source: CDC



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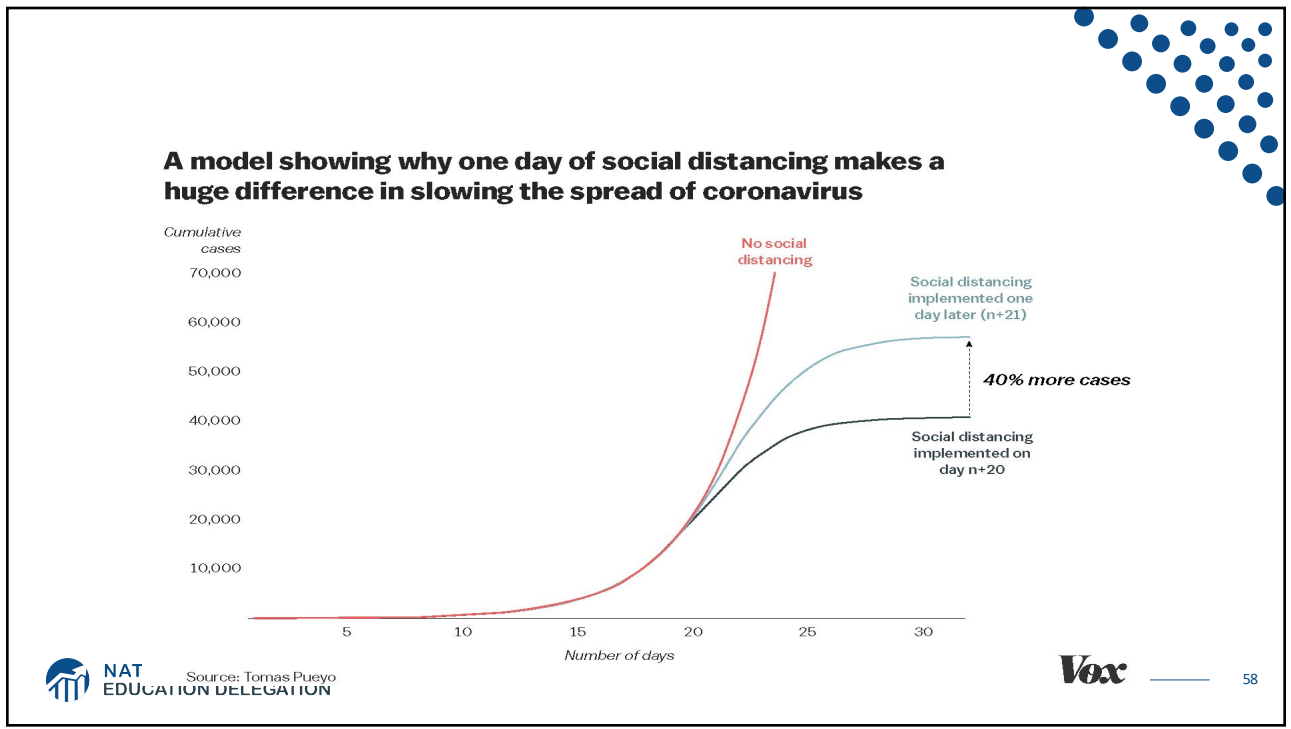
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How contagious is a disease?
 Scientists use "R naught," or R_0 , to estimate how many other people one sick person is likely to infect

Covid-19
 $2-3.11$
 *This estimate is preliminary and likely to change

Zika
 $3-6.6$
 *An early estimate based on the Colombia outbreak in 2015

Measles
 $11-18$

Ebola
 2

HIV
 $3.6-3.7$
 *An estimate based on Réunion Island in 2006

Seasonal flu
 1.3

Norovirus
 $1.6-3.7$

SOURCES: Travel Medicine, PLOS One, JAMA Pediatrics, MDPI, NCBI, New England Journal of Medicine, "The Spread and Control of Norovirus Outbreaks Among Hospitals in a Region" **Vox**

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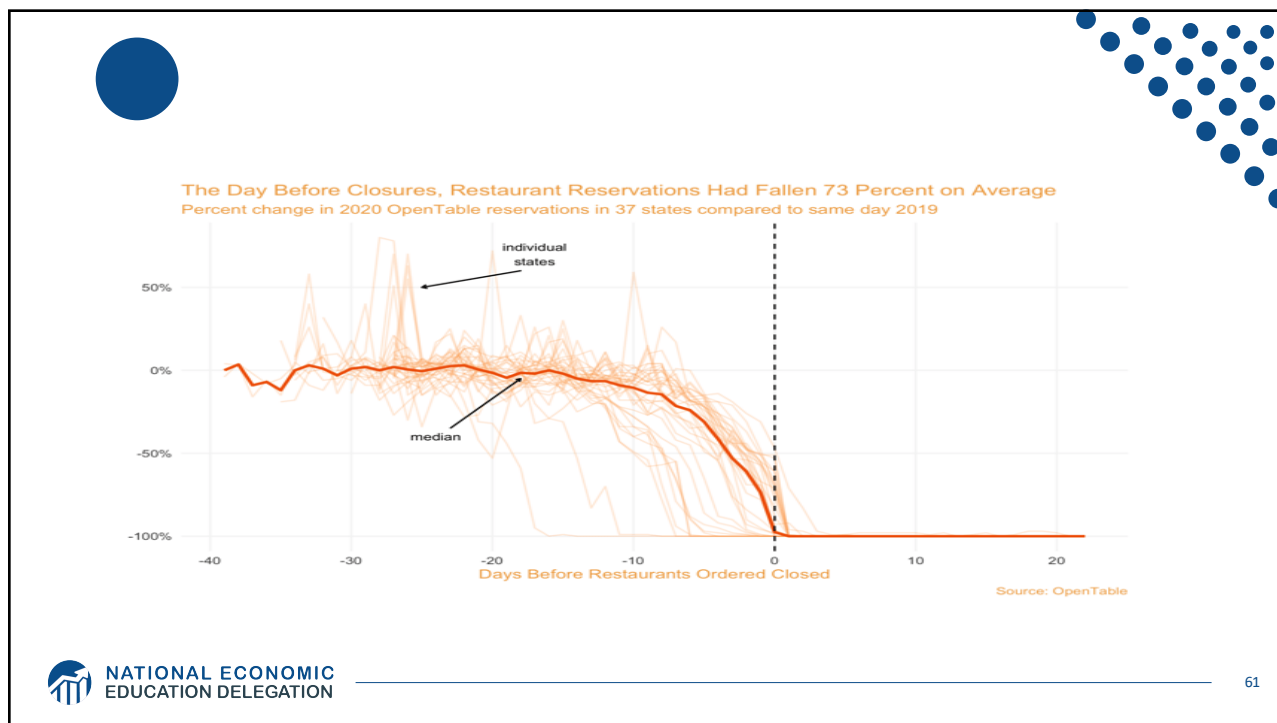
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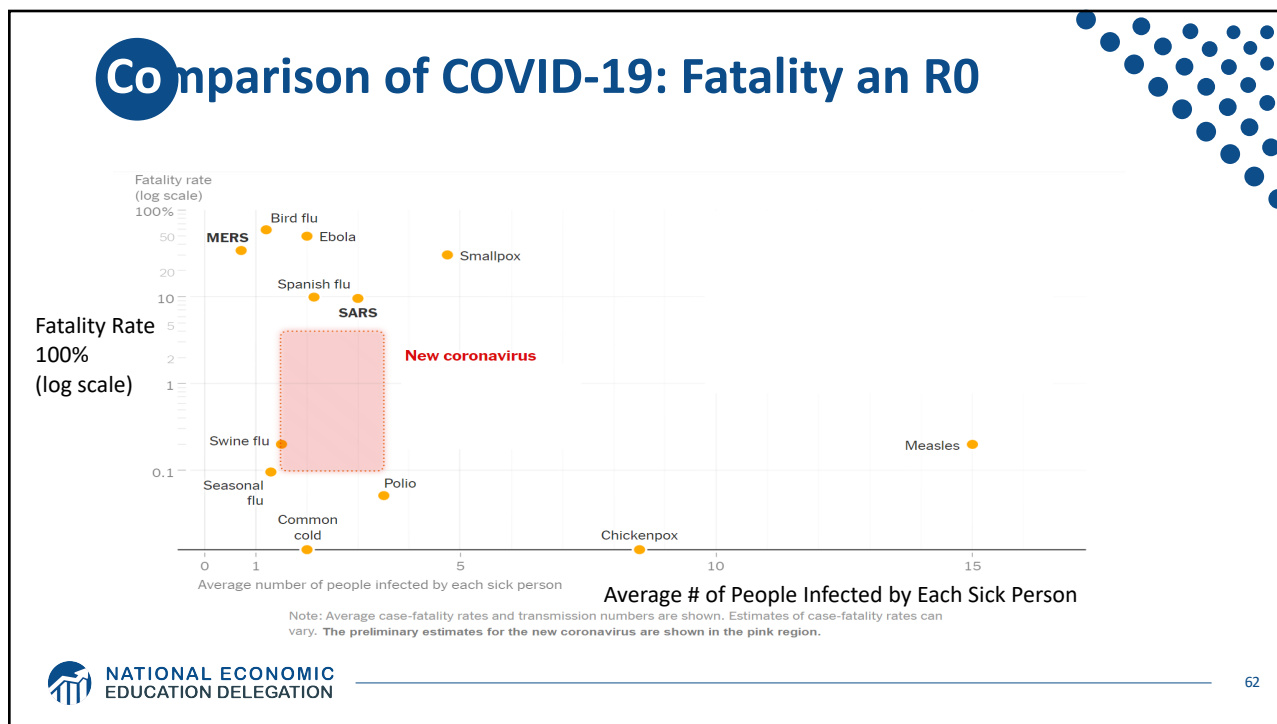
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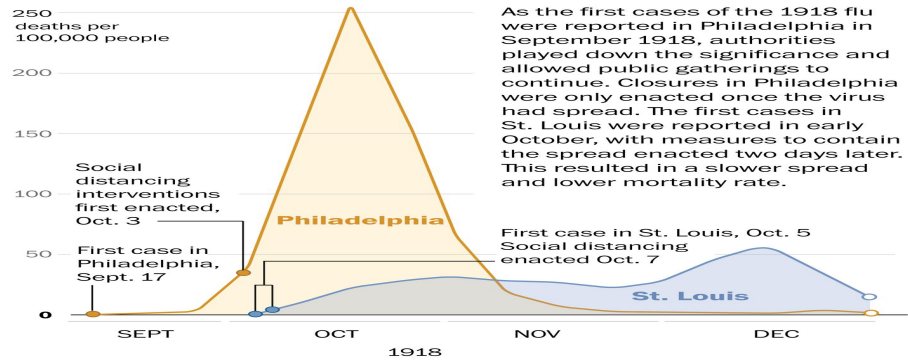
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Effective Social Distancing

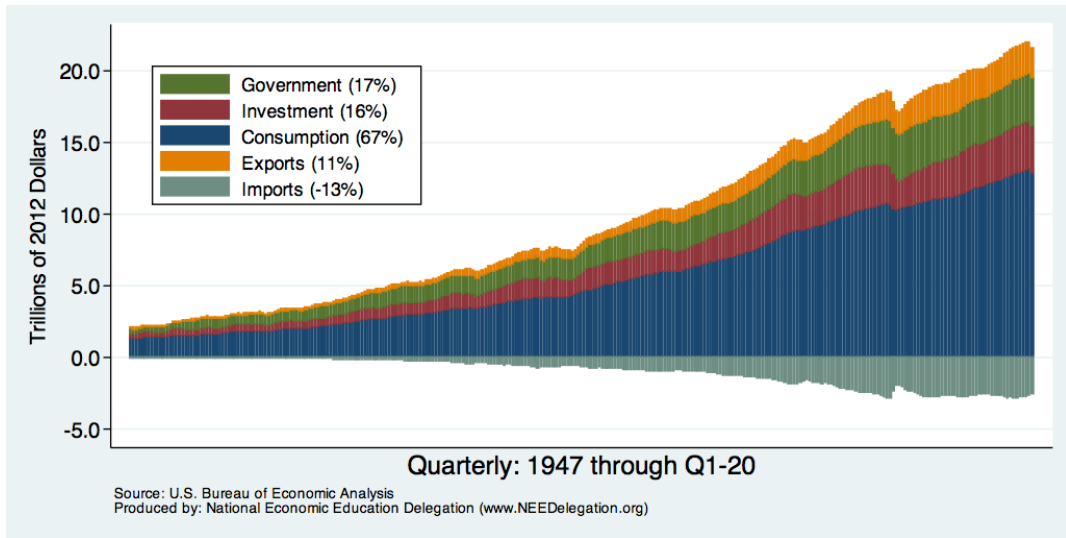
Effects of social distancing on 1918 flu deaths



As the first cases of the 1918 flu were reported in Philadelphia in September 1918, authorities played down the significance and allowed public gatherings to continue. Closures in Philadelphia were only enacted once the virus had spread. The first cases in St. Louis were reported in early October, with measures to contain the spread enacted two days later. This resulted in a slower spread and lower mortality rate.

Sources: "Public health interventions and epidemic intensity during the 1918 influenza pandemic" by Richard J. Hatchett, Carter E. Mecher, Marc Lipsitch, Proceedings of the National Academy of Sciences May, 2007. Data derived from "Public health interventions and epidemic intensity during the 1918 influenza pandemic" by Richard J. Hatchett, Carter E. Mecher, Marc Lipsitch, Proceedings of the National Academy of Sciences May, 2007. TIM MEKO/THE WASHINGTON POST

Composition of Real GDP



Source: U.S. Bureau of Economic Analysis
Produced by: National Economic Education Delegation (www.NEEDelegation.org)

Thank you!

Any Questions?

www.NEEDelegation.org

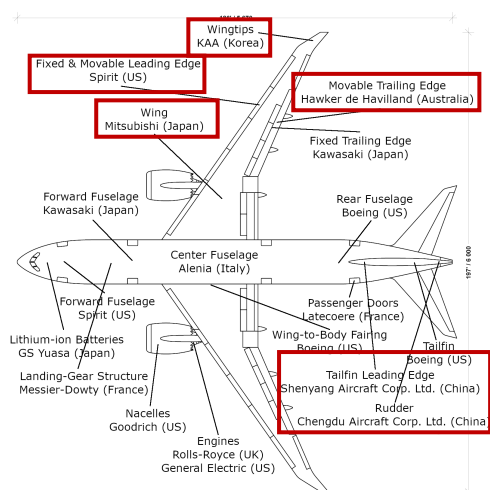
<presenter name>

<presenter email>

Contact NEED: NEEDelegation@gmail.com

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Coronavirus: Supply Chains



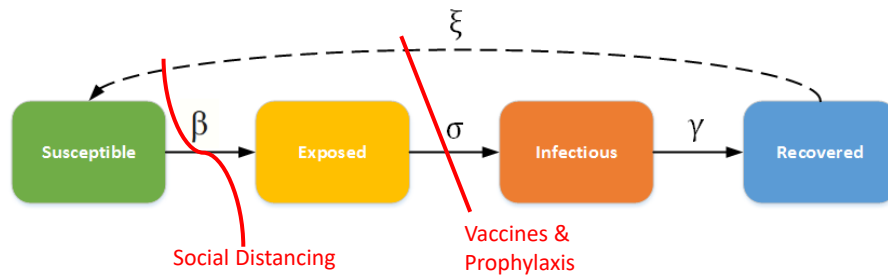
If contained, COVID-19 would mainly disrupt manufacturing supply chains.

The more a country's manufacturing relied on these supply chains the bigger the impact on GDP.

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Epidemiology and Flattening the Curve

- The importance of testing and social distancing on containment.



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