



COVID-19: Economic Implications and Policy Response

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Outline

- What is this?
- What does economics offer?
- Economic implications
- Vulnerabilities
- Evidence
- Policy

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What is This?

- **A health crisis with enormous economic implications.**
- **It is:**
 - A perfect storm of economic difficulty
 - Supply side
 - Demand side
 - Financial
 - Without a culprit



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What Does Economics Offer?

- **Insight into the transition of the virus from health to the economy.**
- **Data on the magnitude of economic vulnerability.**
- **Cost benefit analysis of social distancing.**
- **Insight into government response:**
 - Appropriate targets of government policy
 - Evaluation of current measures
 - Fiscal and monetary policies
 - What else might be done and why?



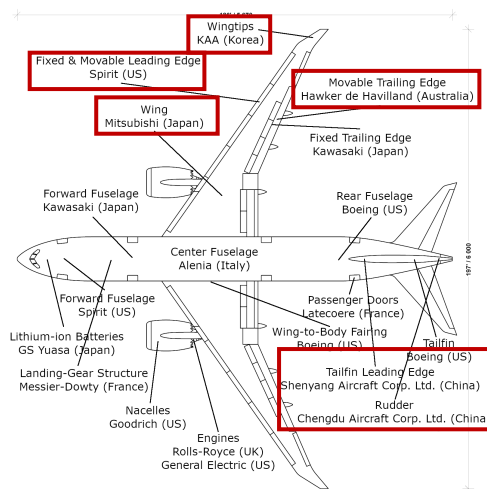
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GDP Shares

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%

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Coronavirus: Supply Chains



- Boeing 787 Dreamliner
- Parts and components from suppliers all over the world:

- Japan
- Italy
- China
- Australia
- ...

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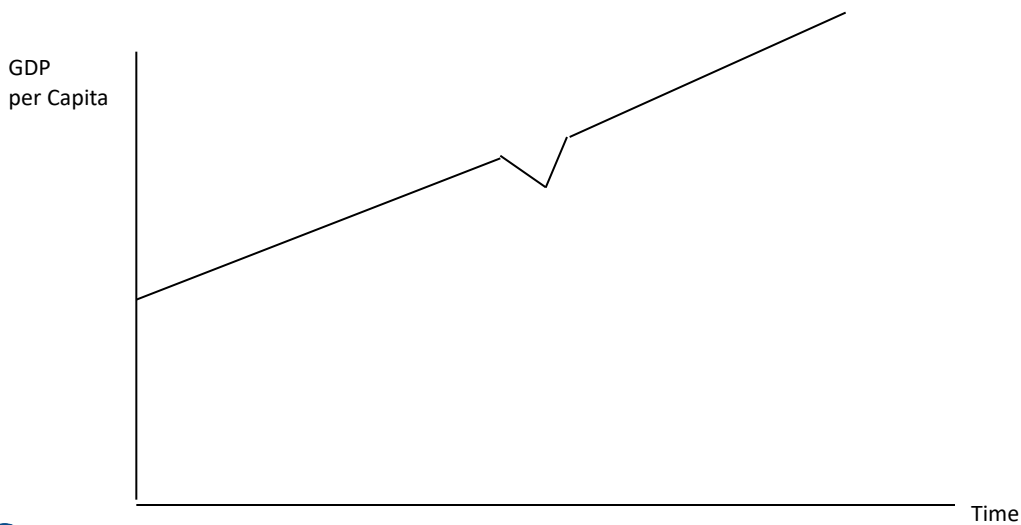
Originally, believed that COVID-19 would be largely contained within a few countries and would disrupt manufacturing supply chains.

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

Still the effect was likely to be to slow GDP by 0.25 to 0.50 from its baseline prediction.

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Modest Impact on GDP of COVID-19

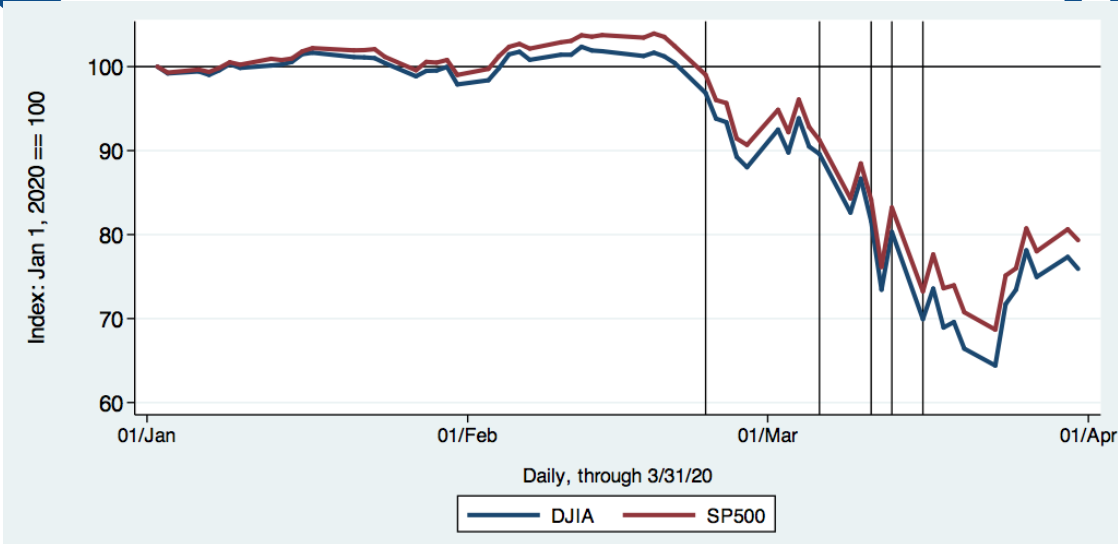


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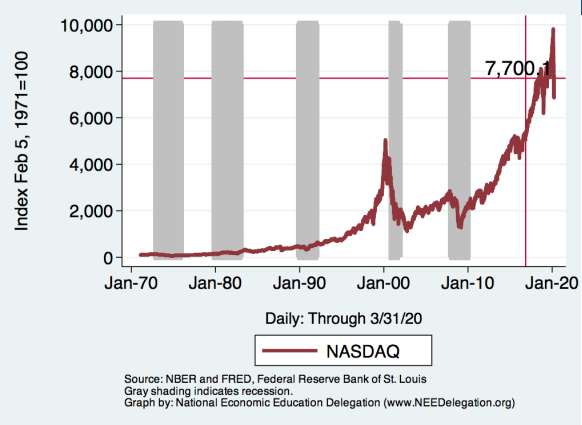
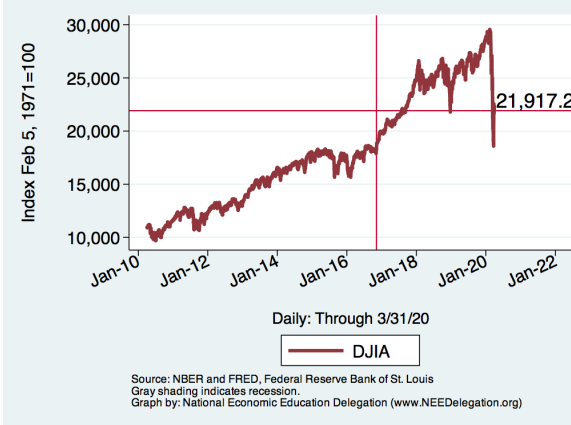
The Escalation of the Economic Effects



DJIA and S&P 500



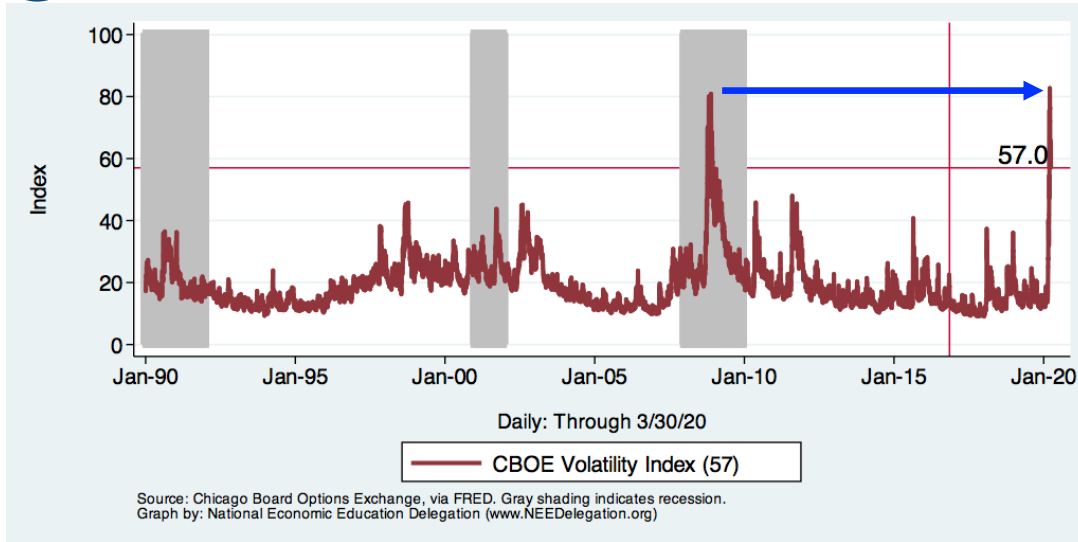
Financial Markets



Big Q: What happens to banks lending standards and credit markets generally?

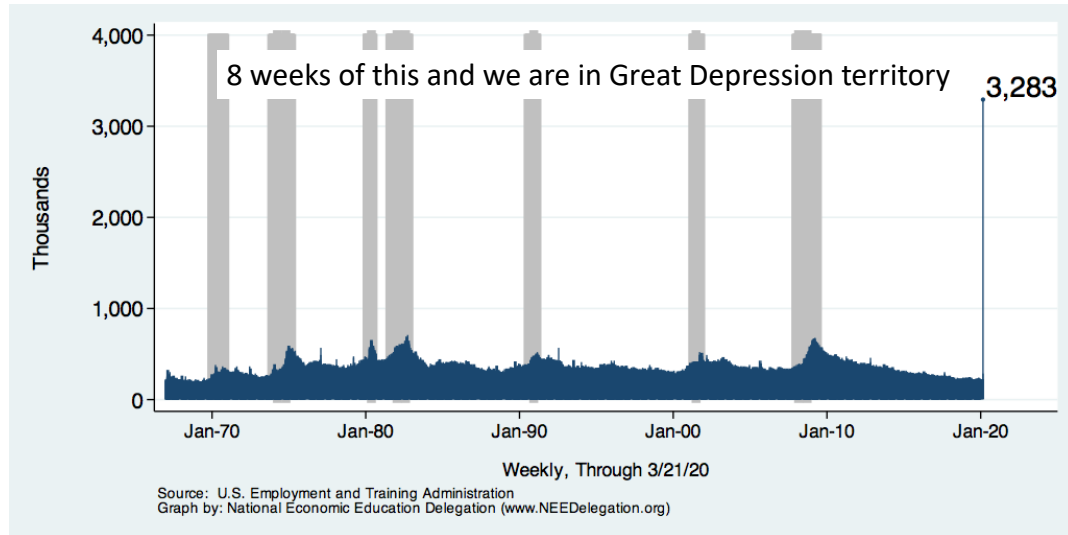
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Market Risk and Stress: CBOE VIX



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Weekly New Unemployment Claims



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Coronavirus: Demand Side and Sudden Stops

- **Stock market**
 - Postpone major purchases
- **Event cancellations**
 - More broadly tourism
- **Universal pseudo-quarantine**
 - Work from home
 - Eat at home
 - Watch movies at home



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GDP Shares and Sudden Demand Stops

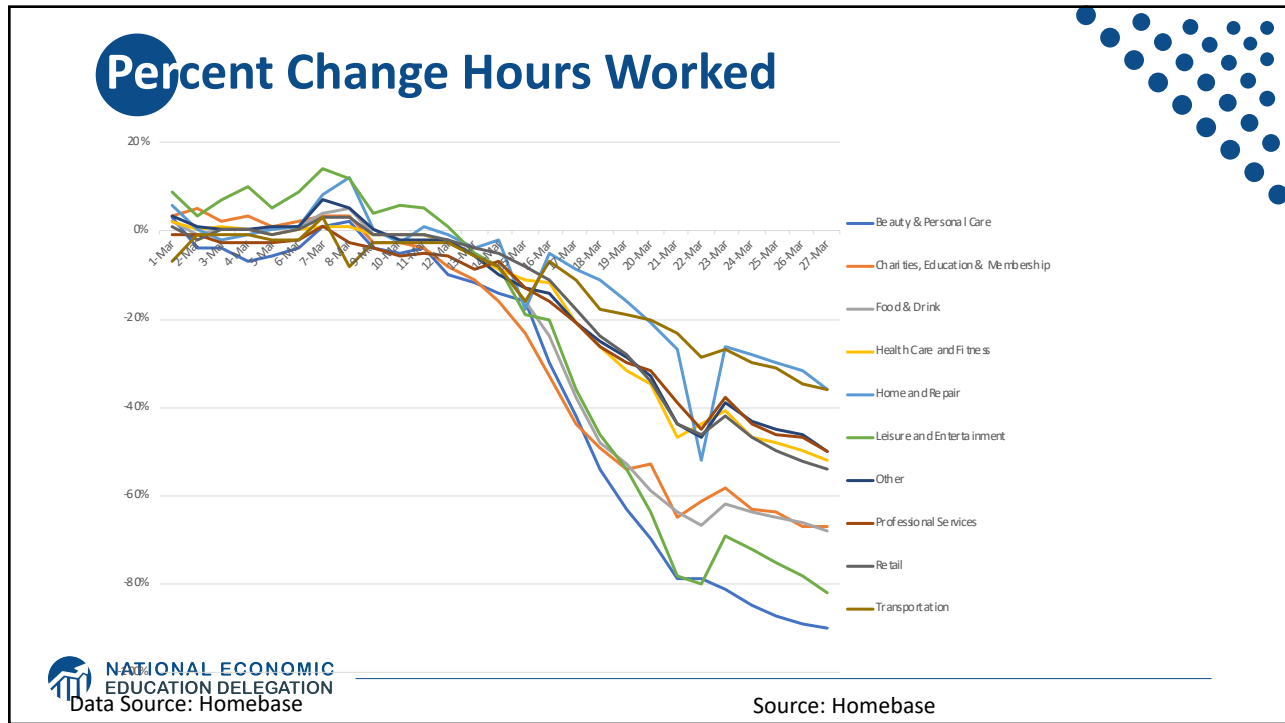
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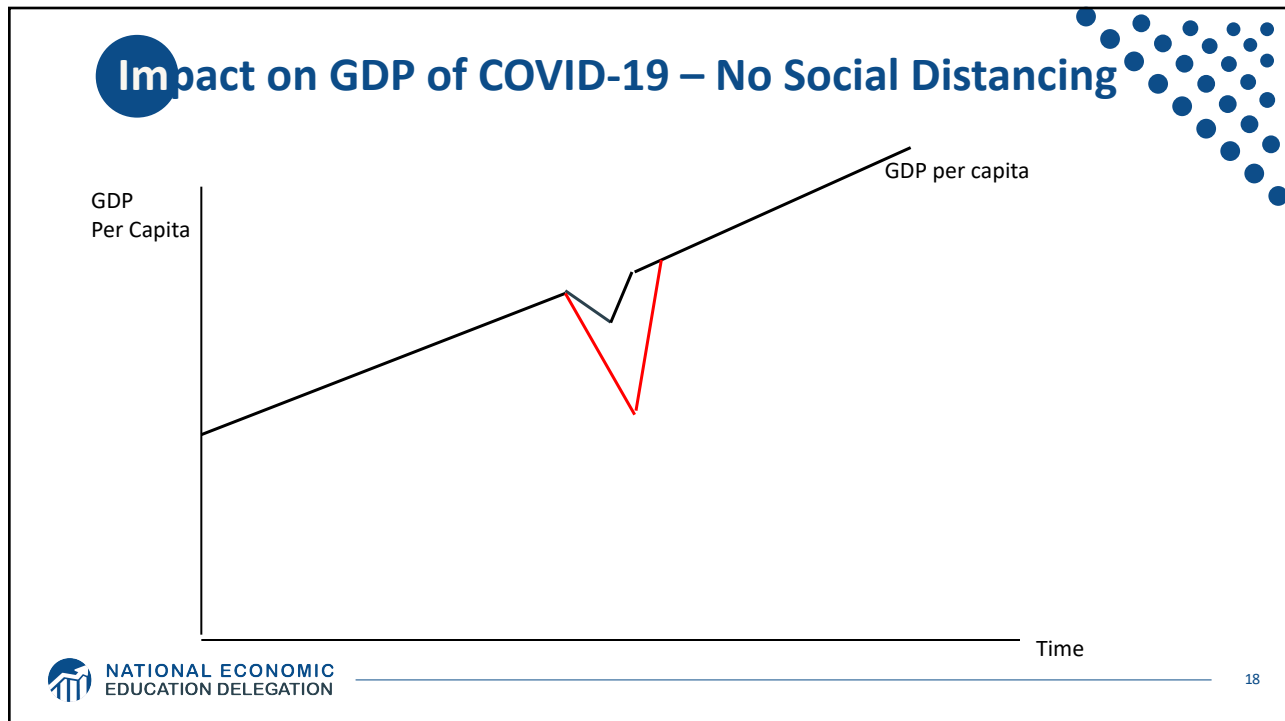
Particularly Vulnerable Industries

Industry	Share of GDP
Arts, entertainment, and recreation	1.1
Management of companies and enterprises	1.9
Other services, except government	2.1
Accommodation and food services	3.1
Transportation and warehousing	3.2
Retail trade	5.5
Educational services, health care, and social assistance	8.7
Manufacturing	11.3
Real estate and rental and leasing	13.3
Total	50.2

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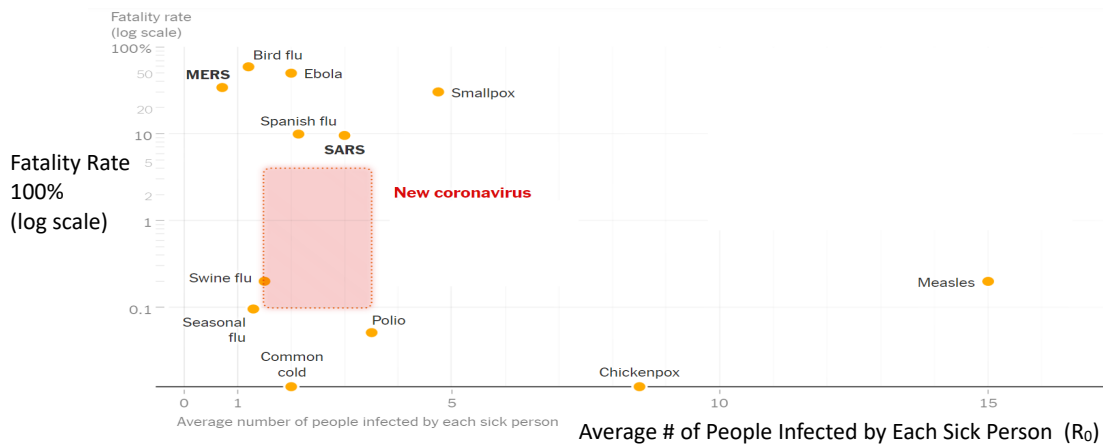


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Epidemiology

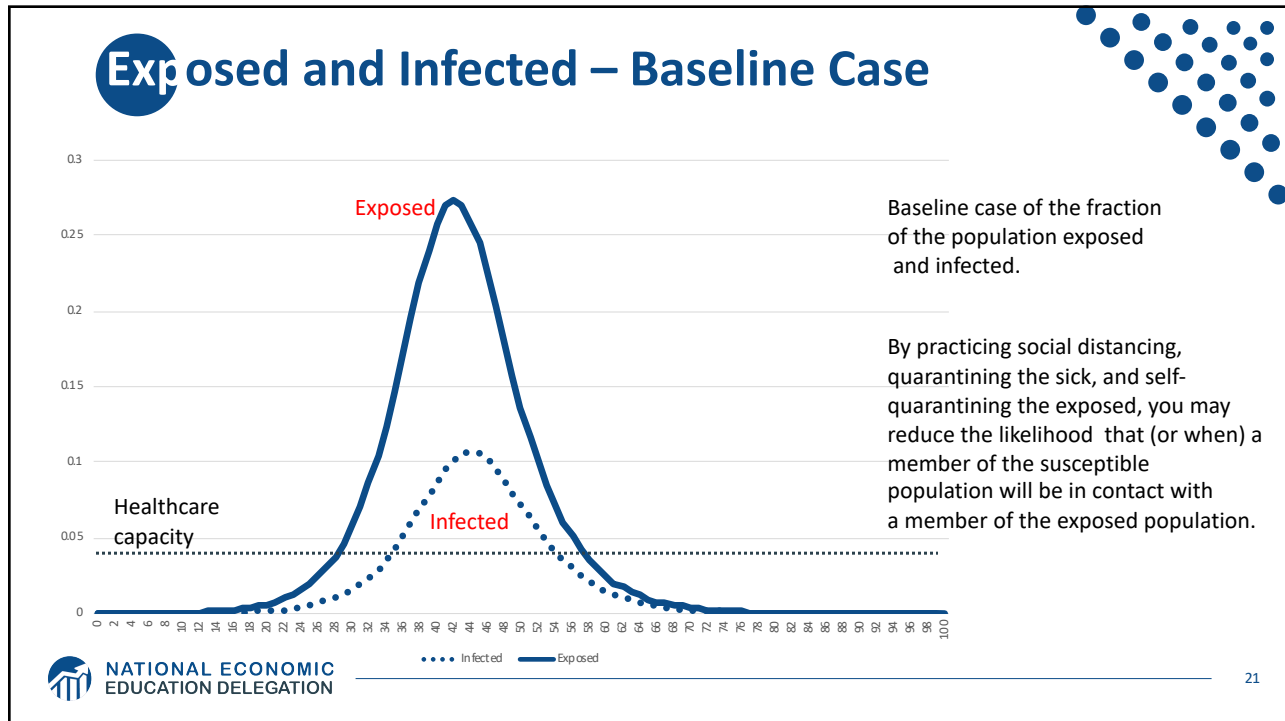
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Comparison of COVID-19: Fatality an R0

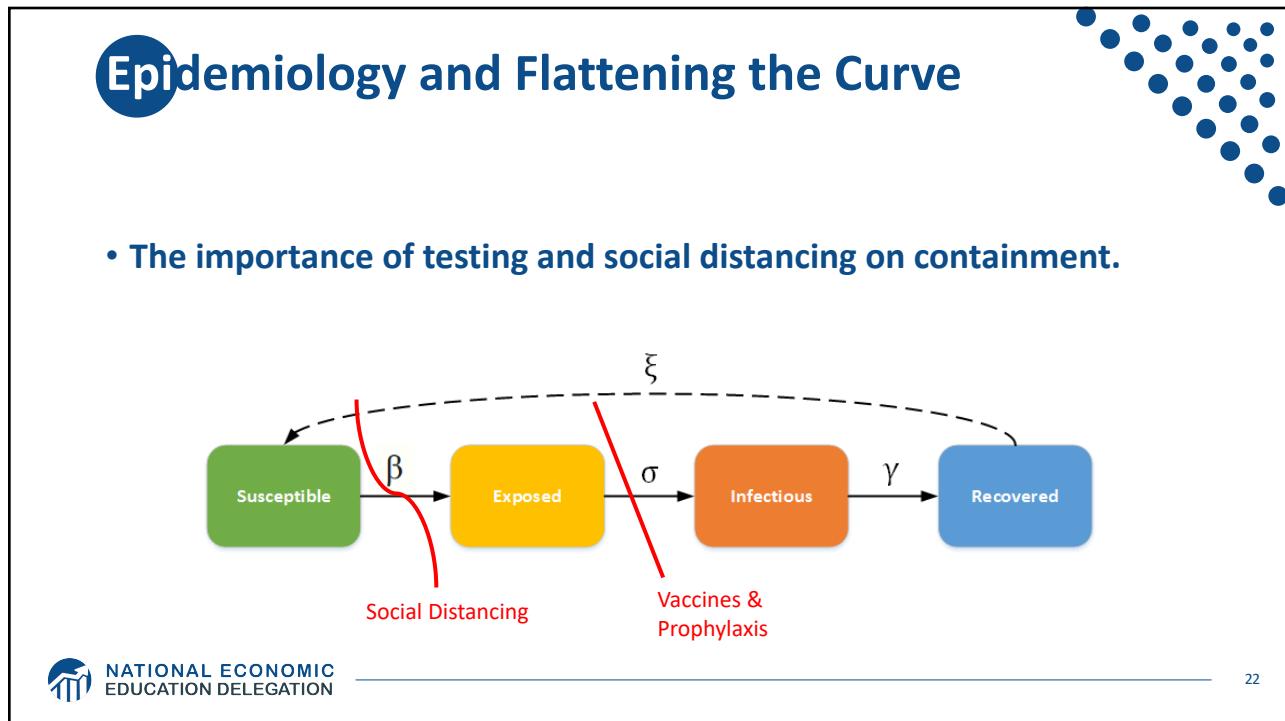


Note: Average case-fatality rates and transmission numbers are shown. Estimates of case-fatality rates can vary. The preliminary estimates for the new coronavirus are shown in the pink region.

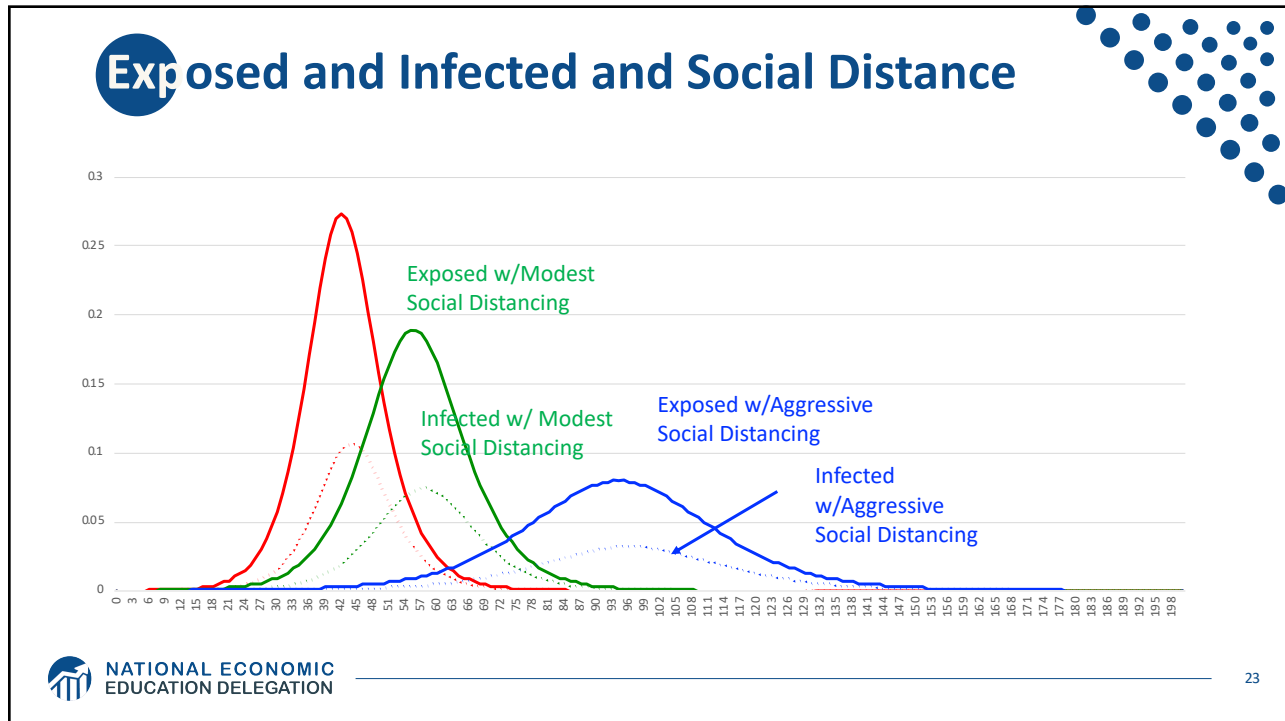
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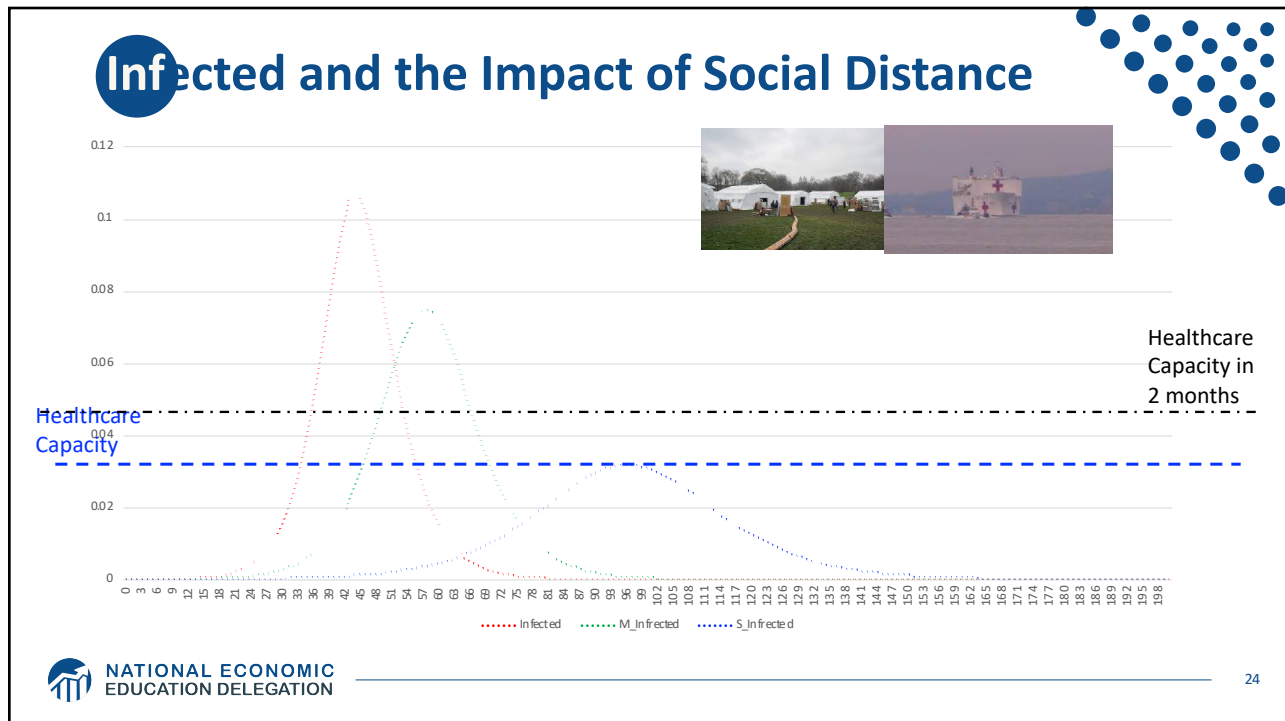
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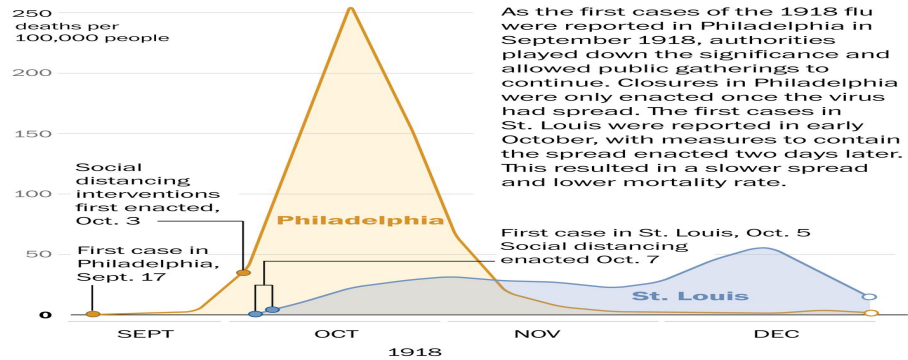
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Effective Social Distancing

Effects of social distancing on 1918 flu deaths

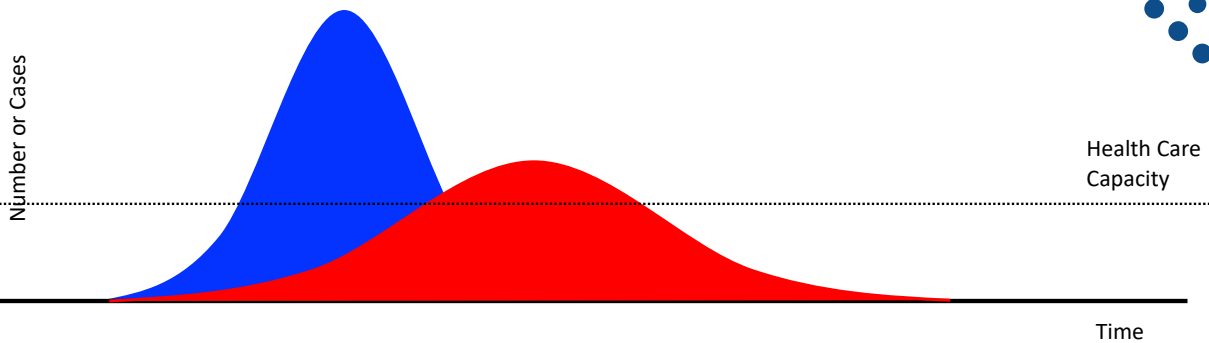


As the first cases of the 1918 flu were reported in Philadelphia in September 1918, authorities played down the significance and allowed public gatherings to continue. Closures in Philadelphia were only enacted once the virus had spread. The first cases in St. Louis were reported in early October, with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

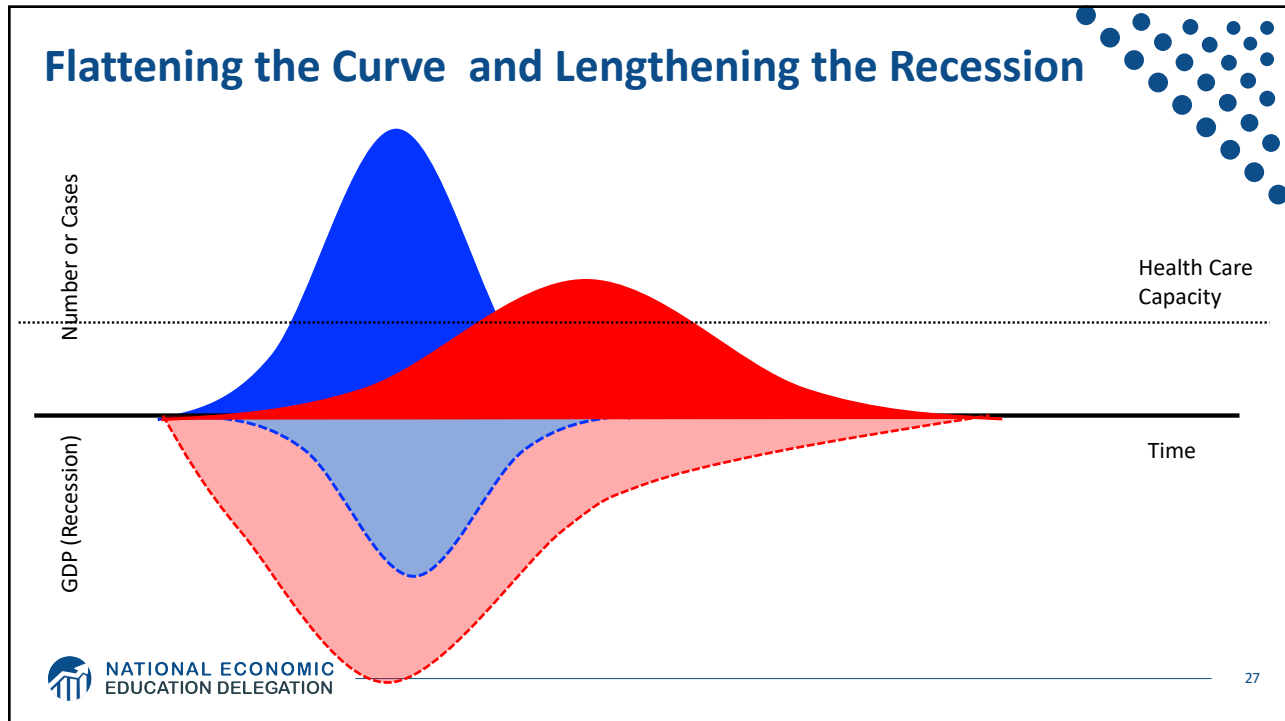
Sources: "Public health interventions and epidemic intensity during the 1918 influenza pandemic" by Richard J. Hatchett, Carter E. Mecher, Marc Lipsitch, Proceedings of the National Academy of Sciences May, 2007. Data derived from "Public health interventions and epidemic intensity during the 1918 influenza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

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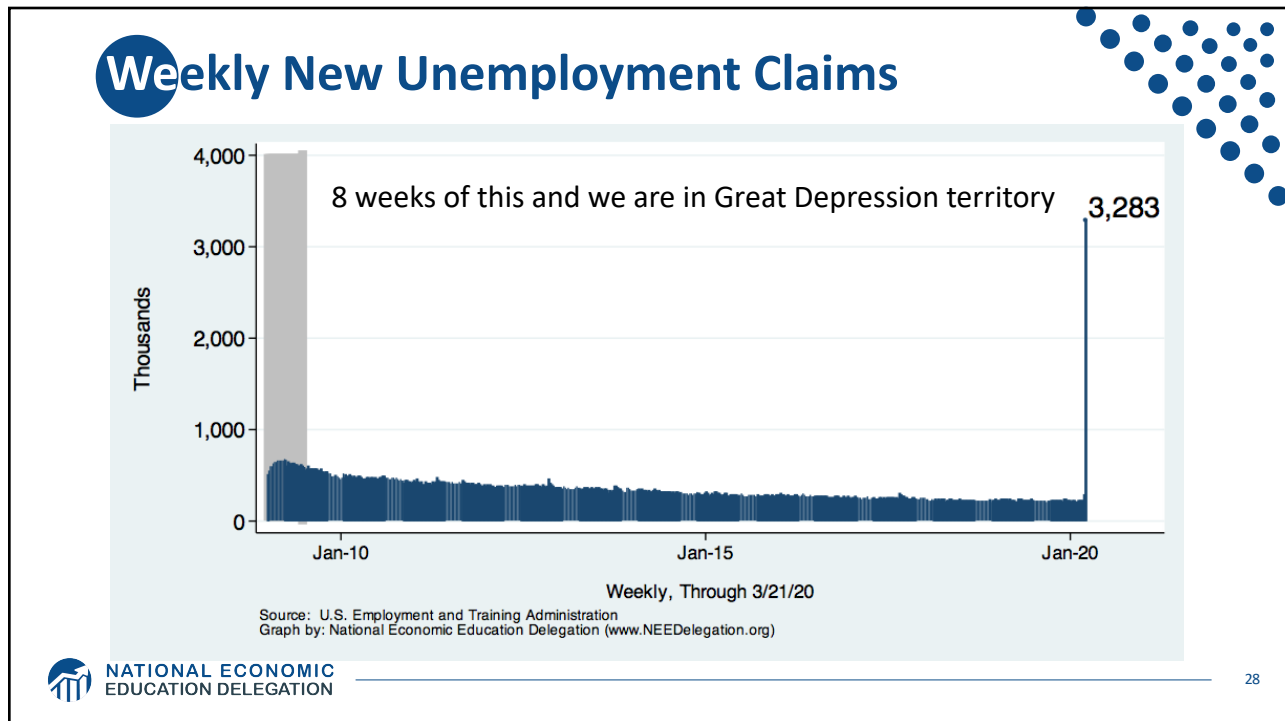
Flattening the Curve



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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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Cost Benefit Analysis: Some Additional Info

- **Value of a statistical life: \$5-14 million**
 - Depends on what the right value of a life is.
 - Depends on net difference in # of deaths.
- **Size of the economy: ~\$2 trillion per month**
 - Depends on economic impact
 - Of containment policies
 - Of unabated virus

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BOTE Cost Benefit Analysis

BOTE: Back Of The Envelope

- If we evaluate the the value of a statistical life at \$7 million, and
- we think that social distancing reduces the number of deaths by 600,000
- Benefit of Saved Lives is: \$4.2 Trillion
- Survivors may face long-term health effects – 2 million valued each at \$500,000
- Survivor Cost: \$1 Trillion
- **Total Benefit of Social Distancing: \$5.2 Trillion**



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

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BOTE Cost Benefit Analysis

BOTE: Back Of The Envelope

- Cost of “Shelter in Place” or “Lockdown”
- The cost of a non-workday reduces unadjusted quarterly GDP by about 0.4%.
- There are about 60+ workdays in a quarter and we lost about 1/8 or March.
- **The cost of a “lockdown” is roughly \$1.3 Trillion**



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<http://caseymulligan.blogspot.com>

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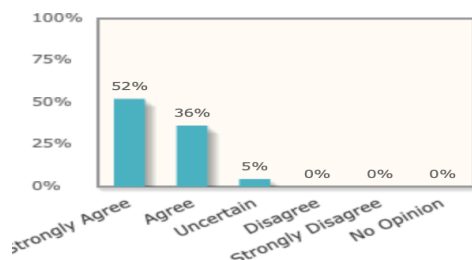
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University of Chicago – Experts Poll

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



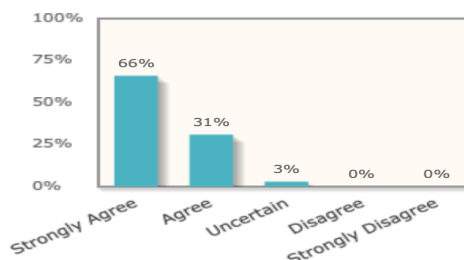
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Source: IGM Economic Experts Panel
www.igmchicago.org/igm-economic-experts-panel



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Responses weighted by each expert's confidence



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

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Potential Economic Costs of Shutdown

- **Unemployment**

- About one-quarter of workers are affected by stay-at-home orders.
- Unemployment on this scale has not been seen since the Great Depression.

- **Cascading bankruptcies of small and large businesses.**

- Businesses face revenue shortfall and are unable to pay their fixed costs and service debt.

- **Long term: disruption from previous growth path.**

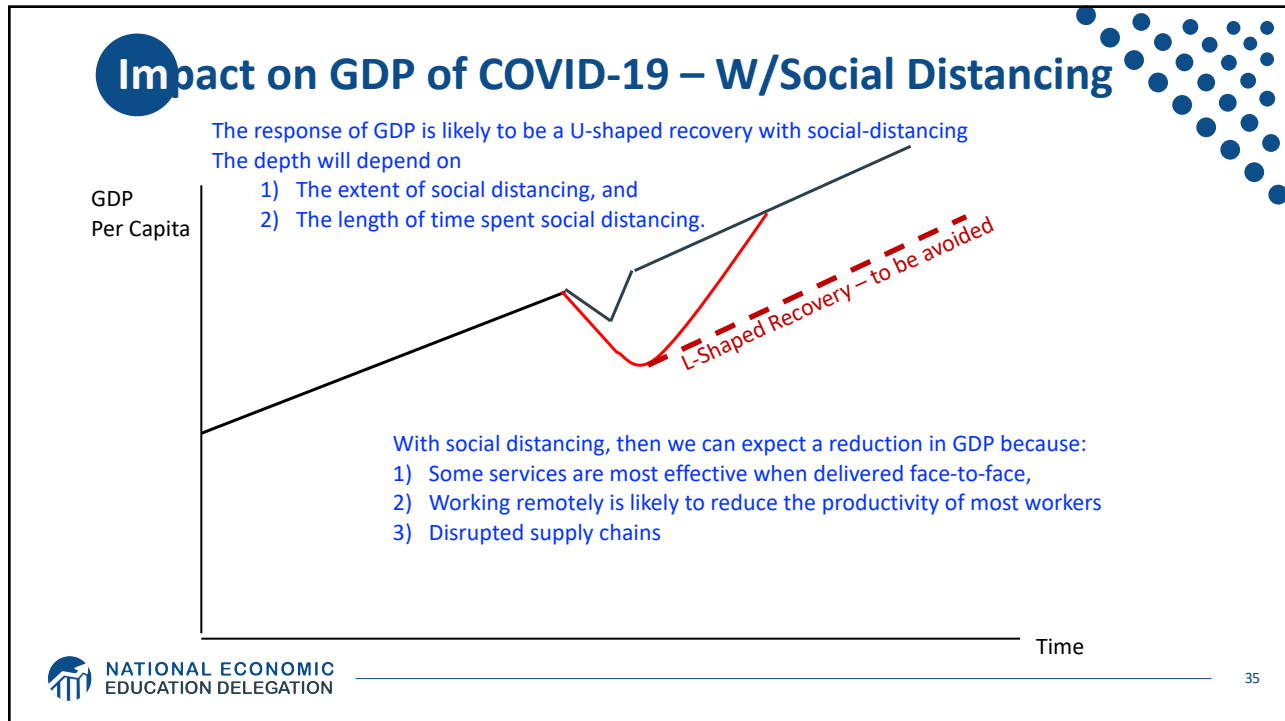
- Perhaps permanent.



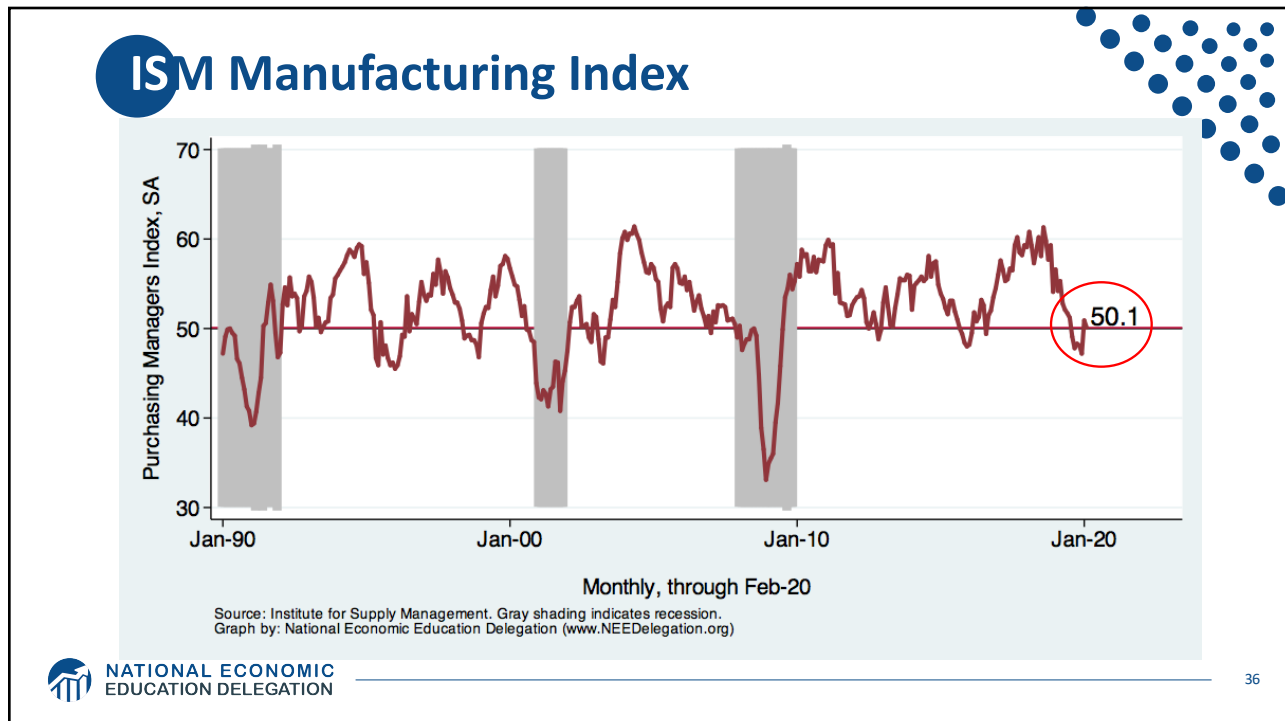
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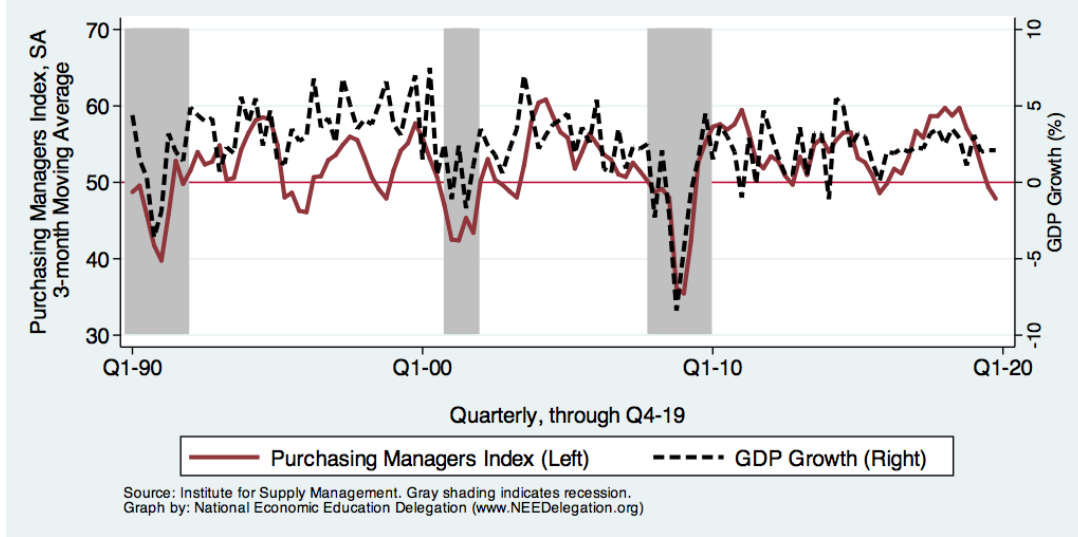


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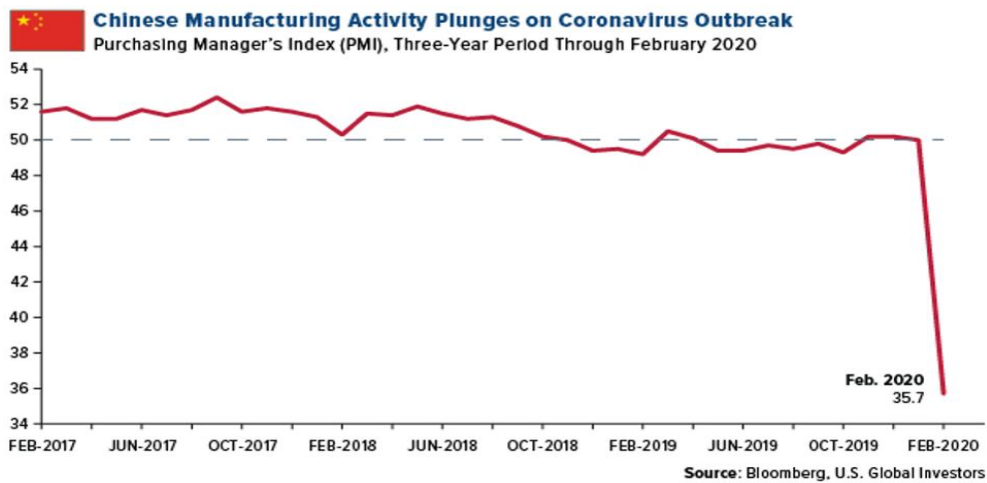
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ISM Manufacturing Index and Real GDP Growth



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China's PMI Manufacturing Index



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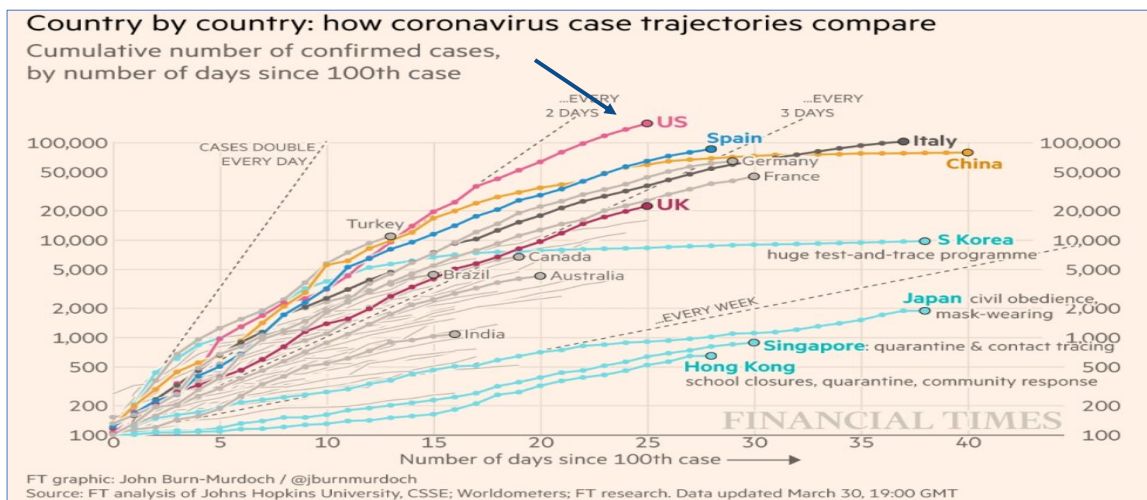
GDP Shares and Impact of COVID-19

Countries	Share of World GDP	Manufacturing as a Share of GDP	Services as a Share of GDP	Confirmed Cases	Deaths
United States	24%	11%	77.4%	176,518	3,431
Canada	2%	10%	66.7%	8,467	95
UK	3%	9%	71.0%	25,150	1,789
Germany	5%	20%	61.8%	68,180	682
France	3%	10%	70.3%	52,128	3,523
Italy	2%	15%	66.3%	105,792	12,428
Spain	2%	11%	67.7%	94,417	8,269
Japan	6%	21%	69.1%	1,953	56
China	16%	29%	52.2%	81,518	3,305

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

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Confirmed Cases by Country



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Economic Crisis Tools

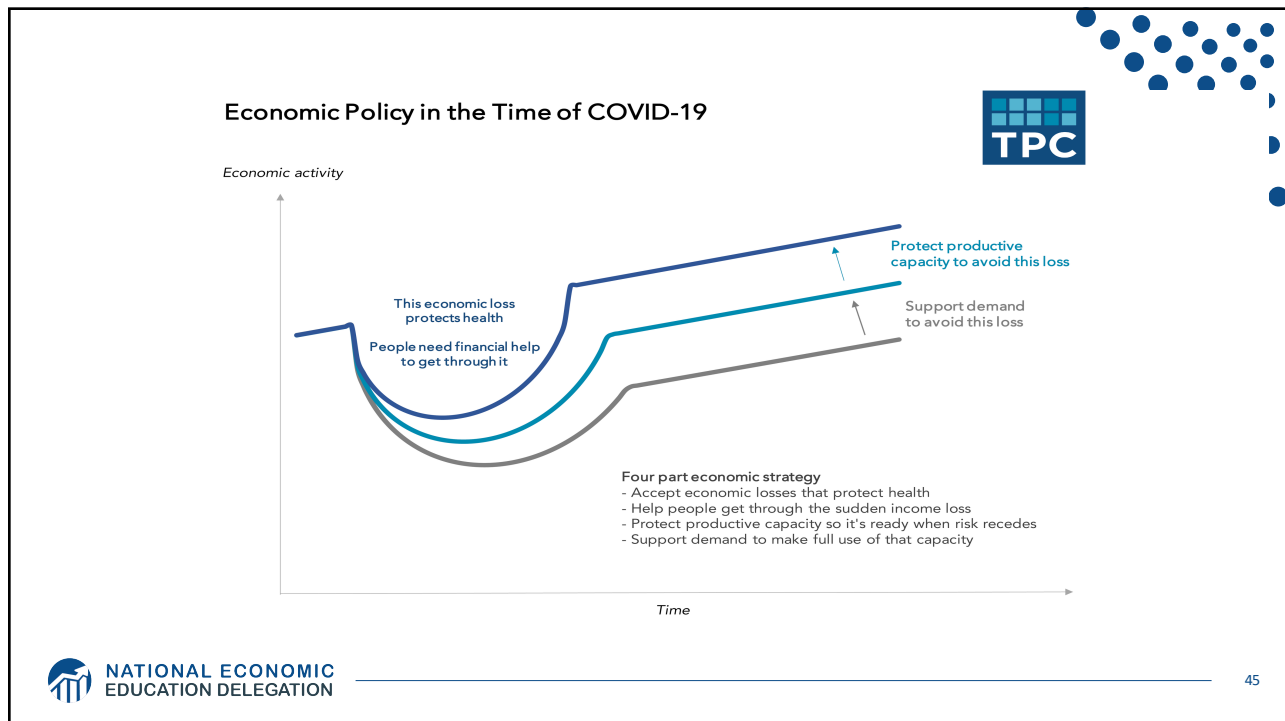
Fiscal and Monetary Policy

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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.**
- **When the crisis is under control -> classical stimulus.**

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Priorities for Policy

- **Policies to protect public health**
 - Long run benefits for the economy.
 - Though there may well be short run pain.
- **Policies to protect the economically vulnerable**
- **Policies to maintain resiliency of the economy**
 - Help firms stay in business, maintain ties with workers
- **Policies to stimulate aggregate demand**
 - Long run – once the economic switch is turned back on

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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.

Fiscal Policy Timeline

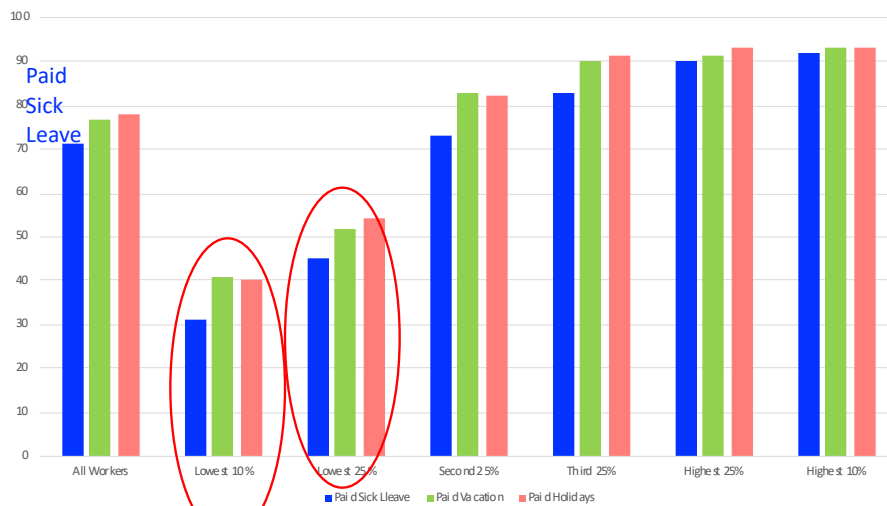
Phase	Amount (\$ bn)	Action
Phase 1 March 6	\$8	Emergency response, health care, vaccine development, prevention
Phase 2 March 18	\$100	Paid sick leave, unemployment insurance, free virus testing
Phase 3 Pending	\$250	Direct cash payments to families with income cap; \$1,200 per adult, \$500 per child
	\$250	Enhanced unemployment benefits
	\$350	Small business loans up to 250% of monthly payroll
	\$100	Corporate tax changes
	\$17	Community lending
	\$500	Loans & loan guarantees for businesses, incl. airlines
	\$180	State and local governments & Education
	\$100	Hospitals
TOTAL	\$1.5-2.5 Trillion	7-12% of GDP

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

- Free testing for anyone whose doctor recommends testing.
- Expand family and medical leave
- Paid emergency sick leave
- Additional unemployment benefits
- Food assistance: Supplemental Nutrition Assistance Program (SNAP) and Home-Delivered Nutritional Services

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

Paid Leave by Income Category



Fiscal Response: Phase 3

- **Direct payment to households \$1,200 for every adult and \$500 for every child (\$250 bn)– similar to the 2008 rebate but purpose is different.**
- **Small business loans -- \$350 bn**
 - <500 employees and designed to cover six (6) weeks of payroll.
- **Loans and loan guarantees for business (including airlines) --\$500bn**
- **State and Local Government & Education**

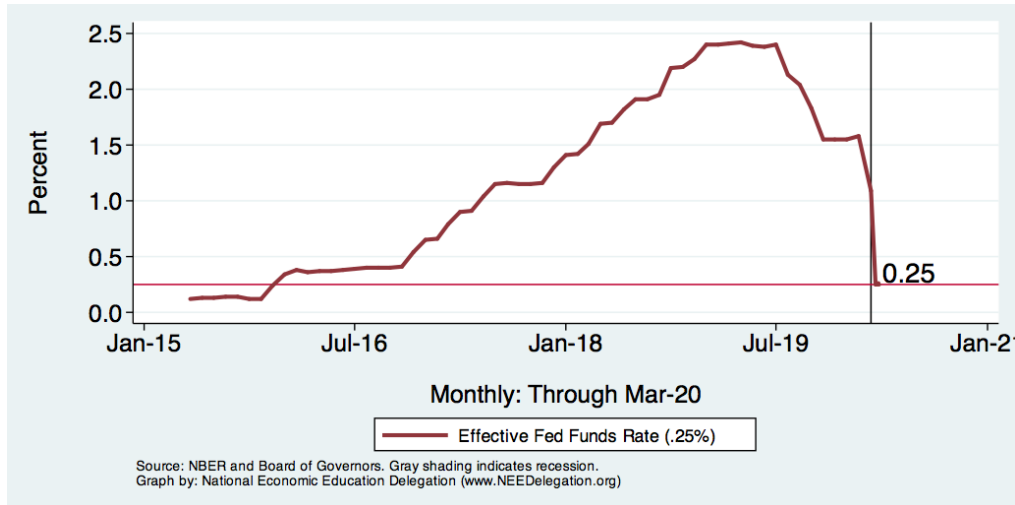
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European Timeline

Date		Date	
2/7	EU Health Minister Video Conference	3/16	G7 agreement / EU sets out coordinated policy response
2/13	Health Council Risk Assessment	3/17	President of Euro Council holds s2nd video conference with other members
2/27	Ministers look at impact on industries	3/18	Support EU budget
3/2	IPCR to full activation mode	3/19	Discuss Social and Employment Consequences
3/4	Discuss impact on Economy	3/20	Suspend Slot requirements for airlines
3/10	President of Euro Council holds video conference with other members	3/23	Ease Fiscal rules Discuss international repatriation

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Federal Reserve Response: Federal Funds Rate

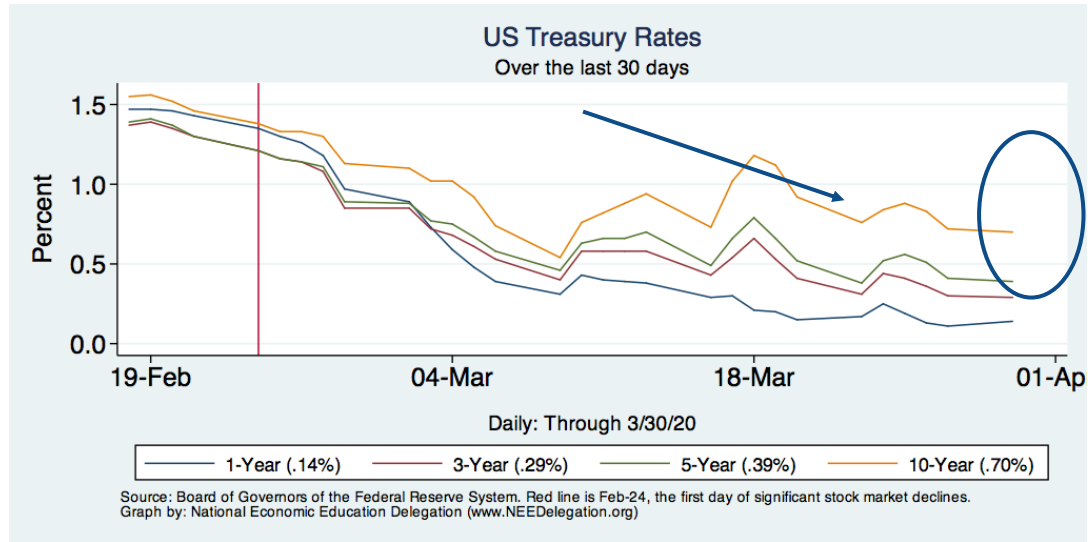


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US Treasury Rates: A Safe Haven?



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Runs Again



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The Most Important Roles of Monetary Policy

I. Macroeconomic Stabilization

- Raise aggregate demand by changing interest rates. To raise demand it needs to lower interest rates
 1. Traditional Monetary Policy uses open market purchases of short-term US Treasuries to lower short-term interest rates (in particular the federal funds rate).
 2. Quantitative Easing (QE) is where the Fed buys long-term Treasuries and Mortgage-backed securities to more directly affect these rates.

II. Insuring Liquidity in Lending Markets by acting as the “Lender of Last Resort”

- The Fed has unlimited access to dollars and when the private sector does refuses to make illiquid loans, the Fed can. This ensures that borrowers have access to credit.
 1. The Fed can make loans directly or by buying new debt issues (thereby increasing “market liquidity.”)
 2. The Fed can also provide loans to intermediaries, so that they in turn can provide loans to customers. (there by increasing “funding liquidity”)

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A Repeat of 2008

I. Macroeconomic Stabilization

1. In December of 2009, the Fed lowered the federal funds rate to essentially zero.
2. In November of 2010, the Fed started the first of 3 waves of QE, which saw the Fed acquire over \$2 trillion in long-term Treasuries and mortgage-backs securities

II. Insuring Liquidity in Lending Markets by acting as the “Lender of Last Resort”

1. During late 2008 and into 2009, the Fed used, so-called, section 13(3) authority to make direct loans to banks and other companies.
2. Starting in March of 2008 (TALF), the Fed started a myriad of programs to help lenders finance maintain their lending activities



Only Much Bigger and Faster: Macroeconomic Stabilization:

I. Short-term Interest Rates

1. March 3, the Fed lowers the target range for the federal funds rate from 1.75-1.5 percent to 1.25-1.0 percent.
2. March 15, the Fed lowers the target range to 0.25-0.0 percent, essentially 0.

II. QE

1. March 15, the Fed announces a QE program
 1. \$500 billion in Treasuries and
 2. \$200 billion in agency mortgage-backed securities.
2. March 23, QE is unlimited and should include commercial mortgage-backed securities



Insuring Market Liquidity

March 17-23, the Fed announced

1. The Primary and Secondary Market Credit Facilities which will allow the Fed to buy corporate bonds so that companies can continue to pay workers.
2. The Commercial Paper Funding Facility which will allow the Fed to buy short-term debt of companies.
3. A Main Street Business Lending Program where the Fed will aid the Small Business Administration in making loans.



Insuring Funding Liquidity

March 17-23, Lending Facilities for

1. Money Market Mutual Funds who buy commercial paper.
2. Primary Dealers who provide short-term financing in many different asset markets, such as repurchase agreements (repos).
3. Financial Institutions that trade state and local municipal bonds.
4. Foreign central banks, so that they can be “lenders of last resort” for foreign financial institutions who want dollar liquidity.



Government Response: Federal Reserve

- Lower (targeted) Federal Funds Rate and “Forward Guidance”.
- QE-2020: Buy \$500 billion of Treasuries and \$200 billion of Mortgage Backed Securities.
- Discount rate cut to 0.25%
- Encourage banks to use intraday credit
- Loan guidance: encourage banks to loan to firms and HHLDS
- Eliminates reserve requirement.
- Create the Money Market Mutual Fund Liquidity Facility designed to help meet the demands for redemption by households and firms.

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Monetary Policy Timeline

Date	Action
March 3	Fed Funds Rate Lowered 1.75-1.5 to 1.25-1
March 15	Fed Funds Rate Lowered to 0.25-0 Announced QE of \$700 billion
March 17	Commercial Paper Funding Facility Primary Dealer Credit Facility
March 18	Money Market Mutual Fund Liquidity Facility
March 23	Primary Market Corporate Credit Facility Secondary Market Corporate Credit Facility Term Asset-Backed Securities Loan Facility Unlimited QE
TBA	Main Street Business Lending Program

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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
- **Additional fiscal measures.**
 - Buyer of last resort (Piketty and Zucman)
 - Employer of last resort (MMT)
- **Additional cash disbursements.**
- **Ultimately: more fiscal policy to restart the economy.**



What have we learned? Positive Take-Aways

- **May improve 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.
- **Potential learning to be carried forward:**
 - Telecommuting
 - Telehealth
 - The value of the "walk around the block".



Big Open Questions

- **When will the dust settle?**
- **When the dust settles:**
 - How close will ties be between businesses and their pre-CV employees?
 - How much will the business environment change?
 - More automation?
 - More telecommuting?
- **Broadly speaking: How quickly can things bounce back?**
- **What will the overall economic cost be.**

Conclusion

- **COVID-19 is a health crisis that has extreme macroeconomic implications.**
- **Negative GDP growth 2020:Q2.**
- **The macroeconomic effects are derived from a perfect storm.**
 - Supply, demand, and financial.
- **Fiscal and monetary response should be targeted at health crisis first and income and employment maintenance.**
 - And it largely is. Fed policy will not stimulate the economy, but may well preserve it.
- **Have to be ready to stimulate the economy when health crisis is over.**

Available NEED Topics Include:

- US Economy
- Climate Change
- Economic Inequality
- Economic Mobility
- US Social Policy
- Trade and Globalization
- Trade Wars
- Immigration Economics
- Housing Policy
- Federal Budgets
- Federal Debt
- 2017 Tax Law
- Autonomous Vehicles

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Thank you!

Any Questions?

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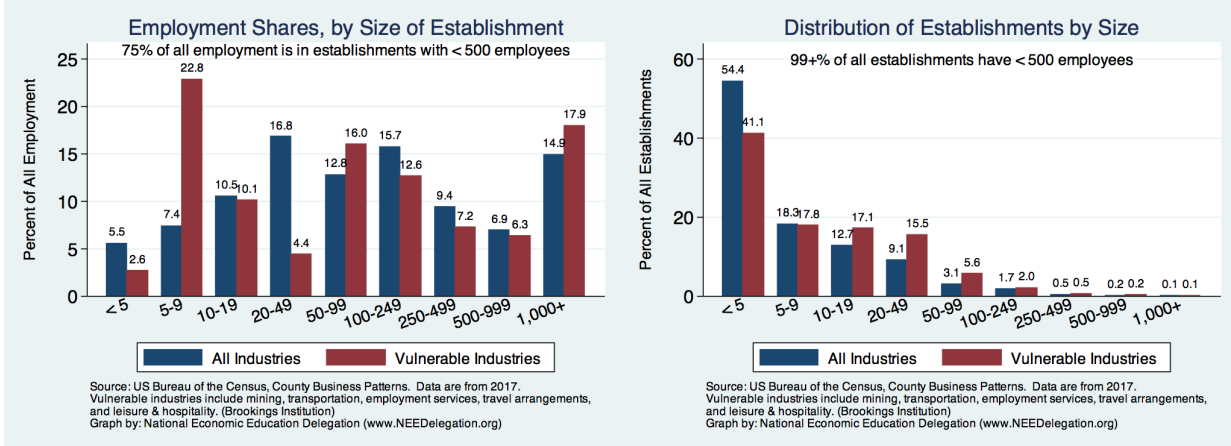
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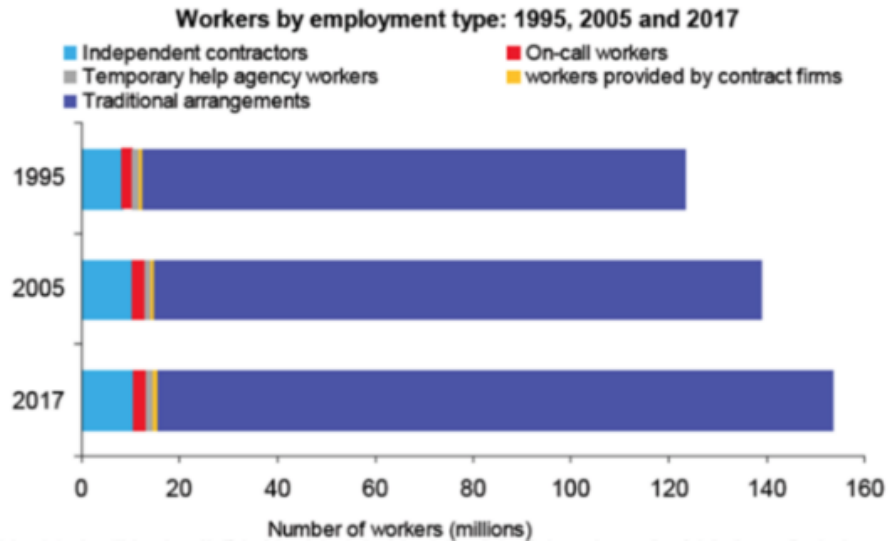
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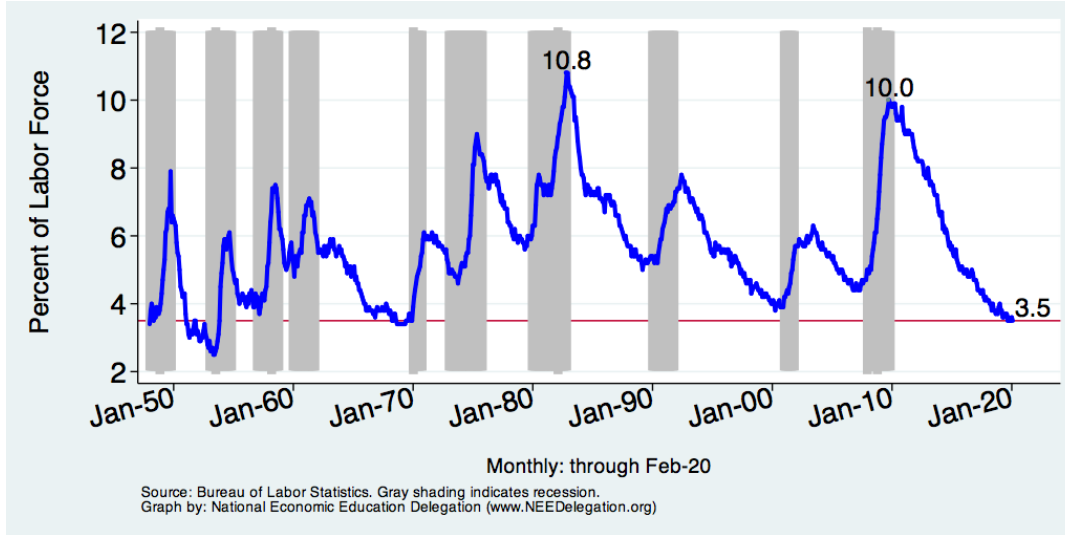
Size of Businesses in Vulnerable Industries



Particularly Vulnerable Workers

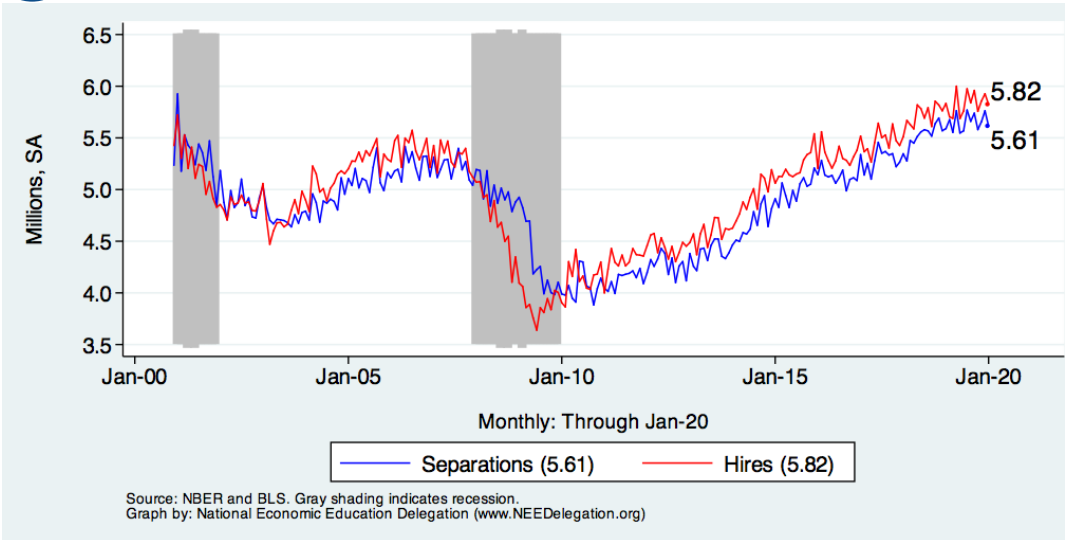


Unemployment Rate: 1950-2020



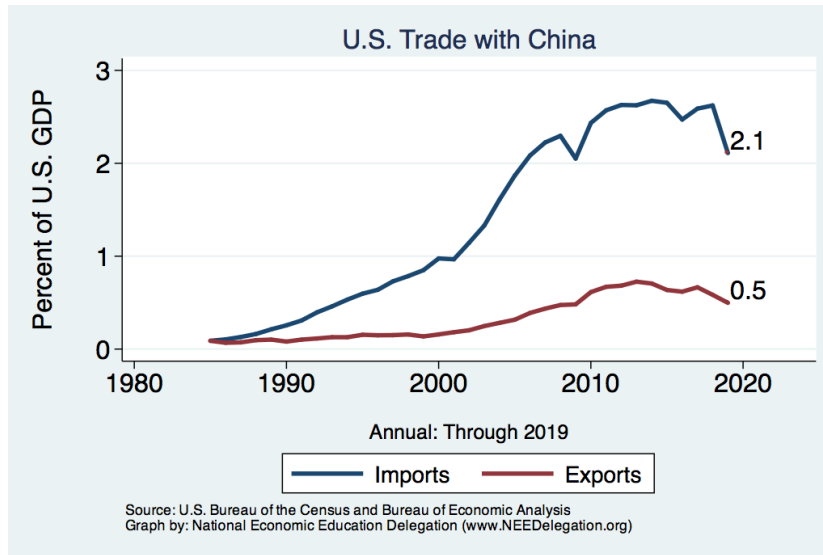
71

Job Separations and Hires



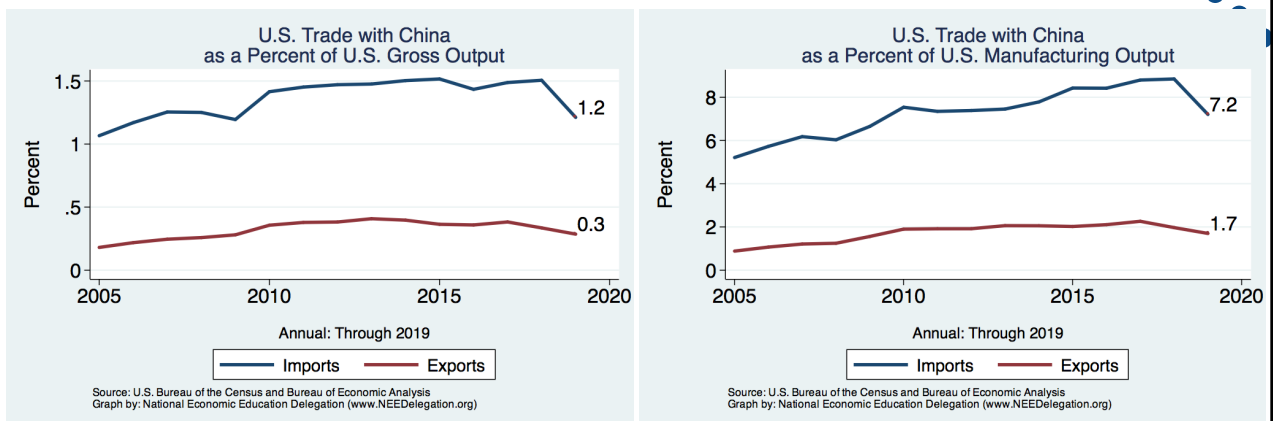
72

Trade with China is Significant, but Small



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Initially: Impact Expected to be Small



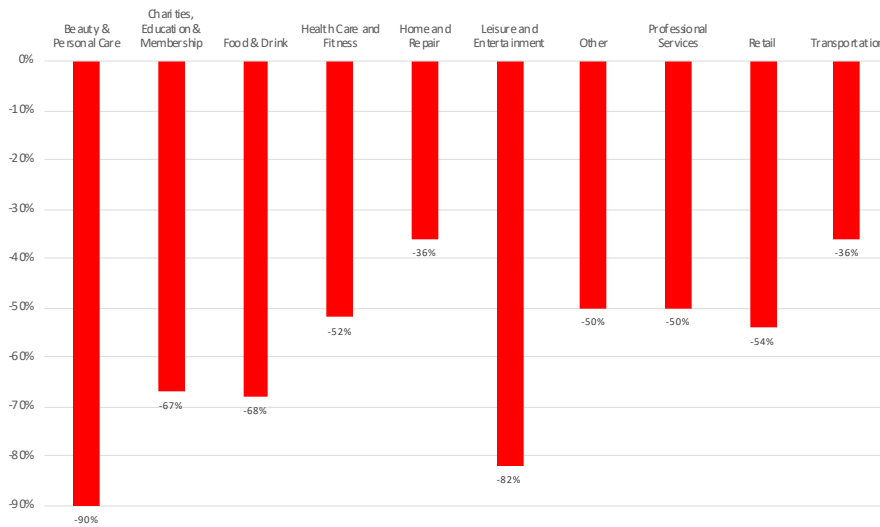
74

Perfect Storm for the Economy

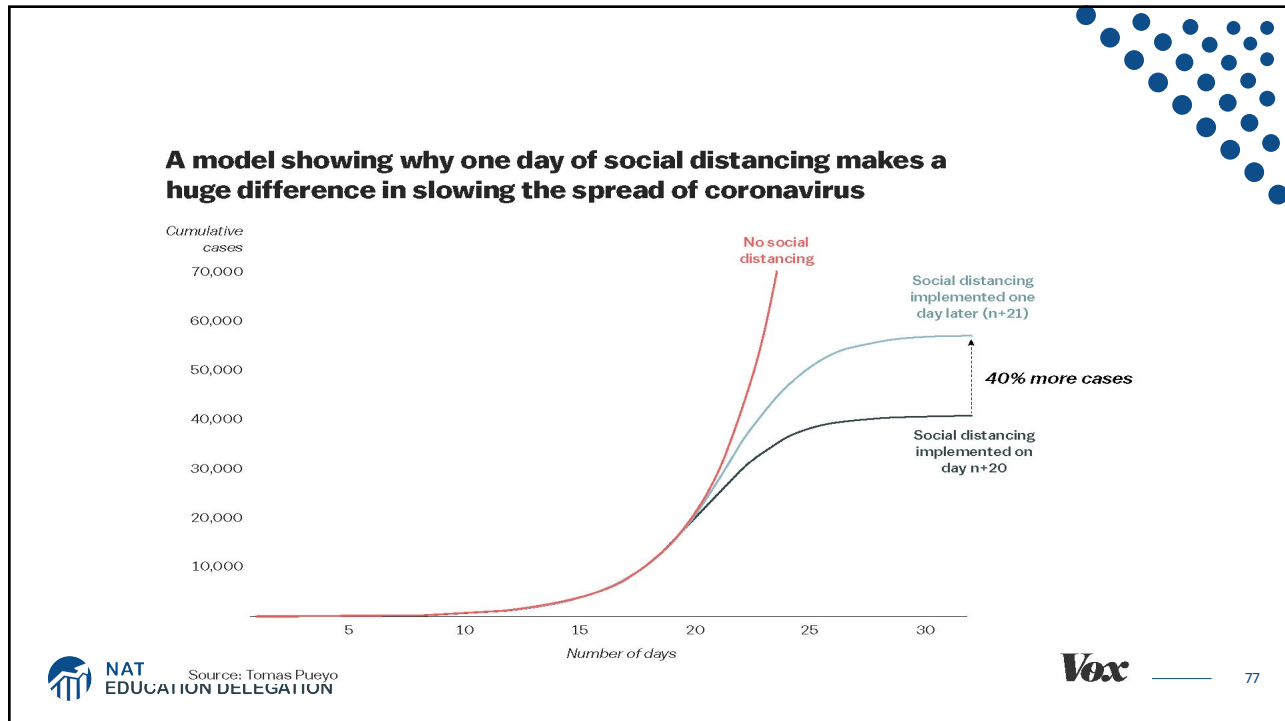
- Supply side
- Demand side
- Financial

75

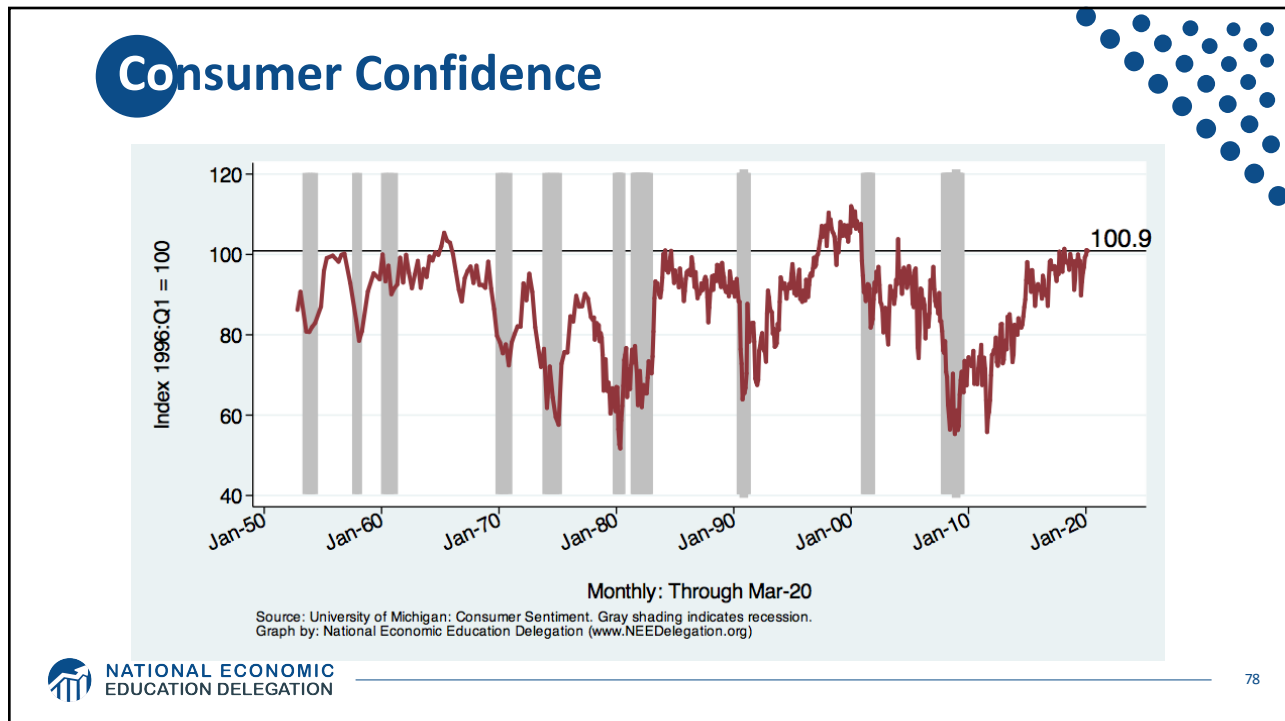
Percent Change Hours Worked



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National Economic Education Delegation

- **Vision**

- One day, the public discussion of policy issues will be grounded in an accurate perception of the underlying economic principles and data.

- **Mission**

- NEED unites the skills and knowledge of a vast network of professional economists to promote understanding of the economics of policy issues in the United States

- **NEED Presentations**

- Are **nonpartisan** and intended to reflect the consensus of the economics profession



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Who Are We?

- **Honorary Board: 47 members**

- 2 Fed Chairs: Janet Yellen, Ben Bernanke
- 6 Chairs Council of Economic Advisers
 - o Furman (D), Rosen (R), Bernanke (R), Yellen (D), Tyson (D), Goolsbee (D)
- 3 Nobel Prize Winners
 - o Akerlof, Smith, Maskin

- **Delegates: 500+ members**

- At all levels of academia and some in government service
- All have a Ph.D. in economics
- Crowdsource slide decks
- Give presentations

- **Global Partners: 45 Ph.D. Economists**

- Aid in slide deck development



NATIONAL ECONOMIC
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Credits and Disclaimer

- **This slide deck was authored by:**

- Scott L. Baier, Clemson University
- Jon D. Haveman, NEED

- **Disclaimer**

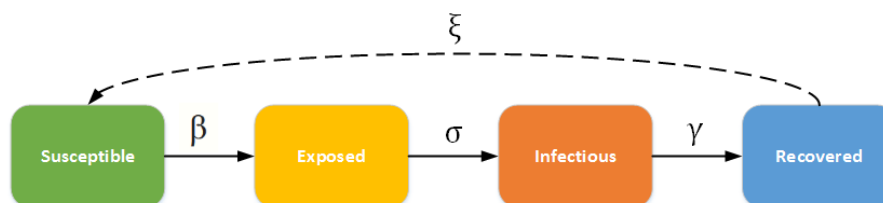
- NEED presentations are designed to be nonpartisan.
- It is, however, inevitable that the presenter will be asked for and will provide their own views.
- Such views are those of the presenter and not necessarily those of the National Economic Education Delegation (NEED).



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Epidemiology and Flattening the Curve

- **In order to understand the economic response, we need to understand the nature of the shock and COVID-19 spreads.**



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Perception of Implications – Timeline

- **Initially**

- Limited geographically – hence fallout limited to Manufacturing
 - o Supply and supply chains

- **Became clear not contained**

- Harder hit to supply chains
- Demand side implications

- **Duration**

- Financial sector implications

