Why Has the US COVID-19 Crisis Been So Severe? The Employer-Sponsored Health Insurance Channel

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1 Introduction

1. Research Question. The US COVID-19 crisis has been disproportionately severe compared with other countries:

- The US population is only 4.3% of the world population.
- But the US has 19.2% of the world's cases and 15.2% of the world's deaths as of December 31, 2021.

Then the research questions are to

- Identify the root causes of such a severe crisis.
- Understand the causal mechanism of the crisis.
- Develop a policy to mitigate the current and future crises.

2. Previous Explanations.

- The delay in the mask mandate (Chernozhukov, Kasahara, and Schrimpf (2021)) does not explain surges in cases and deaths after the implementation of the mask mandate.
- Large-scale testing (Taipale, Romer, and Linnarsson (2020)) would have prevented the crisis. But lack of testing alone would not explain the disproportional severity of the US COVID-19 Crisis compared with other countries.

3. Lessons from the 2008-2009 Financial Crisis. Bernanke, Geithner, and Paulson (2020) identify that excessive leverages of the financial institutions before the crisis was a root cause of the 2008-2009 financial crisis.

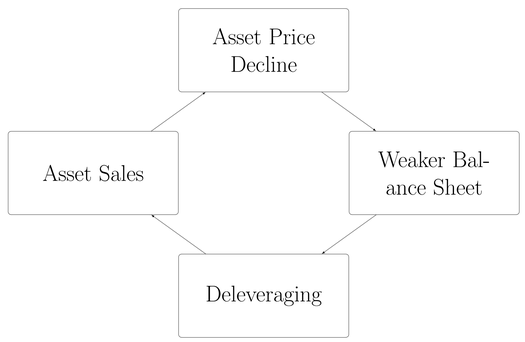

Figure 1. Leverage Amplification Mechanism in the 2008-2009 Financial Crisis (Adrian and Shin (2008))

Then we need to understand the systemic vulnerability of the US health care system.

4. Crucial Novelty of the Paper. The crucial novelty of the paper is that this paper is the first paper that studies the unique severity of the US COVID-19 crisis via its unique health insurance system:

- A significant number of uninsured population (28.9 million in 2019).
- Employer-sponsored insurance system (ESI) where majority of people are insured.
- High health care costs.

The amplification mechanism of this paper is as follows:

- Increases in COVID-19 cases and deaths will lead to lockdowns.
- Lockdowns will lead to significant increases in unemployment.
- When people lose jobs, people lose employer-insured health insurance.
- These uninsured people become vulnerable to COVID-19.
- Further increases in cases and deaths will trigger further lookdowns.

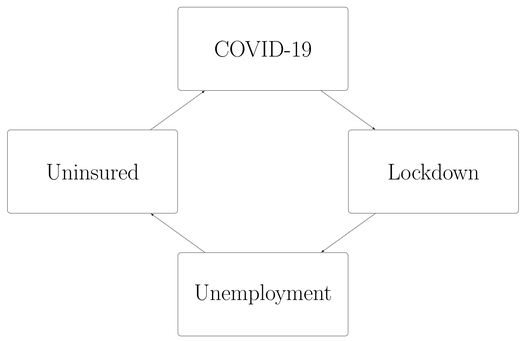

Figure 2. Employer-Sponsored Insurance Amplification Mechanism in the 2020-2021 COVID-19 Crisis

2 The Effect of Health Insurance Coverage on the COVID-19 Crisis

5. Model. The paper considers 16 specifications using national and state-level data. Here we present models (13)-(16). For each state i, for $t = 1, 2, ...$

$$\begin{aligned}&(\text{State Cases})_{it}\\ =\ &\alpha + \beta(\text{State Uninsured Rate})_{it}\\ &+\gamma(\text{State Unemployment Rates})_{it}\\ &+\sum_{j\in\{\text{states}\}}\delta_j(\text{Dummy Variable for State } j)_t\\ &+\sum_{k\in\{\text{policies}\}}\epsilon_k(\text{Policy Variable for Policy } k \text{ and State } i)_t\\ &+\zeta t + \varepsilon\end{aligned}$$

We consider the data before the vaccine EUA to focus on the effect of uninsured rate. To be consistent with the previous research, we consider policy variables used in Chernozhukov, Kasahara, and Schrimpf (2021) (stay-at-home, closed nonessential businesses, closed K-12 schools, closed restaurants except takeout, closed movie theaters, and face mask mandates for employees in public-facing businesses).

6. Significance of Uninsured Rates on COVID-19 Cases. The effect of the uninsured rates on COVID-19 cases is highly statistically significant for all 16 specifications. Results for model (13)-(16) are given below:

State Daily Cases	(13)	(14)	(15)	(16)
State Uninsured Rate (%)	805.65***	770.00***	643.00***	643.97***
	(0.00)	(0.00)	(0.00)	(0.00)
State Unemployment Rate (%)	959.81***	1192.34***	1637.36***	1634.34***
	(0.00)	(0.00)	(0.00)	(0.00)
Mask Mandate (#)		1925.93**	375.07	353.64
		(0.01)	(0.56)	(0.63)
Closures of Business,			-2838.76***	-2896.53**
Restaurant, Movies (#)			(0.00)	(0.00)
Stay at Home Order (#)				70.63
				(0.06)
Time Trend	1973.09***	2180.28***	2637.15***	2634.65***
	(0.00)	(0.00)	(0.00)	(0.00)
Constant	Yes	Yes	Yes	Yes
Observations	223	223	223	223
R-squared	0.858	0.863	0.894	0.894
F-statistics	440	342	367	305

Table 3. Regressions of State Cases on State Uninsured Rates Controlling State Unemployment Rates, State Heterogeneity, State Policy Variables, and the Time Trend

3 Counterfactual Analysis: What Could Have Happened with the Repeal of ACA or with the Full Medicaid Expansion?

7. Effect of the ACA Repeal/Full Medicaid Expansion. We follow Banthin, Simpson, and Blumberg (2020) for the estimates of uninsured rates with the ACA repeal.

- The ACA repeal could have increased the COVID-19 cases by 3.42 times (confidence interval 2.59 to 4.25).
- The full Medicaid expansion could have reduced the COVID-19 cases by 72% (confidence interval 51% to 87%).

Although these estimates seem too drastic at first sight, given that the US had 528% higher per-capita cases compared with the world average in December 2020, these results are consistent with the intuitions that

- A country cannot contain the pandemic when people cannot afford health care.
- Having health insurance coverages comparable with other countries could have mitigated the US COVID-19 crisis to the level comparable to other countries.

4 Conclusion

8. Summary and Conclusion. We find:

- In the 2008-2009 financial crisis, excessive leverages of financial institutions created a systemic crisis via fire-sales spillover.
- In the 2020-2021 COVID-19 crisis, uninsured population and ESI create a systemic crisis via spillover of COVID-19 to the population as they are not being able to afford health care.
- One would need a long-term response in the health system to be able to deal with the current and future crisis as one did for the financial system after the 2008-09 financial crisis with Dodd-Frank, BASEL III, OFR, and FSOC.

Table 4 below summarizes the points of the paper.

	Financial System	Health System
Systemic Risk	Excessive leverage	Uninsured population and ESI
Externality	Fire-sales spillover	Spreading COVID-19 to others
Crisis	2008-09 Financial Crisis	2020-21 COVID-19 Crisis
Short-term Response	Asset Purchases	Vaccine, American Rescue Plan
Long-term Response	Dodd-Frank, BASEL III	?

Table 4. Comparison of the Financial System and the Health System

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