

# Singapore's Battle Against COVID-19 under A Global Perspective



Economic Society of Singapore 2<sup>nd</sup> Webinar Series  
By Guiying Laura Wu



# A Crisis Like No Other: Global

(real GDP, annual percent change)	2019	2020	2021
<b>World Output</b>	<b>2.9</b>	<b>-4.9</b>	<b>5.4</b>
<b>Advanced Economies</b>	<b>1.7</b>	<b>-8.0</b>	<b>4.8</b>
United States	2.3	-8.0	4.5
Euro Area	1.3	-10.2	6.0
Germany	0.6	-7.8	5.4
France	1.5	-12.5	7.3
Italy	0.3	-12.8	6.3
Spain	2.0	-12.8	6.3
Japan	0.7	-5.8	2.4
United Kingdom	1.4	-10.2	6.3
Canada	1.7	-8.4	4.9
Other Advanced Economies	1.7	-4.8	4.2
<b>Emerging Markets and Developing Economies</b>	<b>3.7</b>	<b>-3.0</b>	<b>5.9</b>
Emerging and Developing Asia	5.5	-0.8	7.4
China	6.1	1.0	8.2
India	4.2	-4.5	6.0
ASEAN-5	4.9	-2.0	6.2

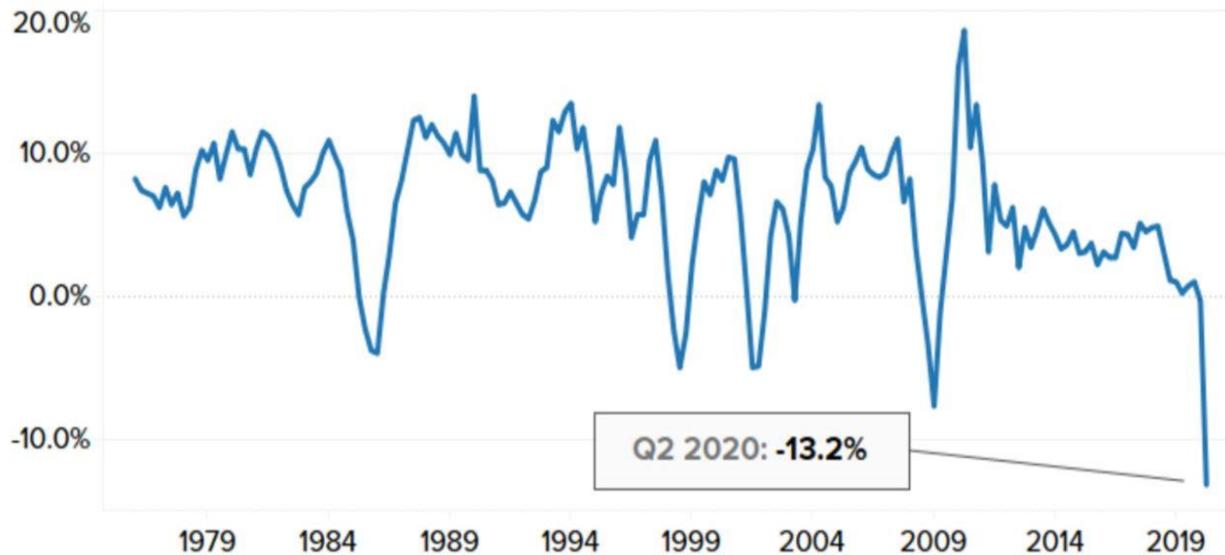
- *Latest World Economic Outlook Growth Projections*
- Source: IMF, *World Economic Outlook Update*, June 2020



# A Crisis Like No Other: Singapore

## Singapore's economic slowdown

Line shows the year-on-year percentage change in real GDP



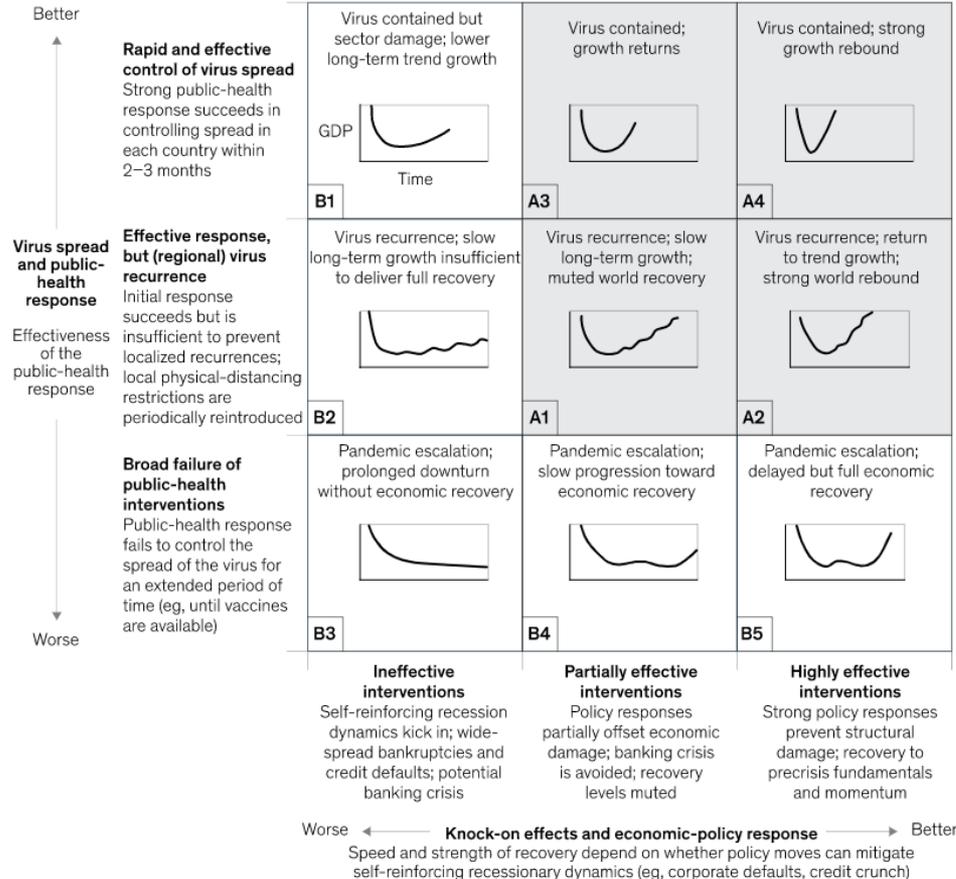
- *Real GDP growth rate for H1 2020: -6.7%*
- *Real GDP growth rate for 2020 projection: -7% ~ -5%*
- Source: MAS, MTI, Singapore

# Tough Questions, Short Answers

- Tough and Pertinent Questions for this Webinar
  - What do these estimates mean for Singapore Economy?
  - How strong will the economy recovery be?
  - Is the Singapore economy resilient enough to bear future waves of COVID-19 and its knock-on effects?
  - Do numbers reflect some functional or structural imbalance in Singapore?
  - What are the implications for Singapore when the region and our trading partners are facing similar economic woes?
- Short but not Simple Answers:
  - The duration and severity of the global pandemic
  - The effectiveness of public policies containing virus and reviving economy
  - The structure of the Singapore economy



# An Uncertain Recovery: Global



- *GDP Impact of COVID-19 spread, pandemic policies, economic policies*
- Source: McKinsey & Company

# Roadmap

- A closer look at Global and Singapore pandemic
- Singapore's containment policy ranking
  - Based on my joint research with Qu Feng, Mengying Yuan and Shihao Zhou, [What does cross-country data speak about COVID-19?](#)
- Singapore's economic policy evaluation
  - Based on [Economic Survey of Singapore by MTI](#) and [Recent Economic Developments in Singapore](#) by MAS
- A K-shaped recovery for Singapore

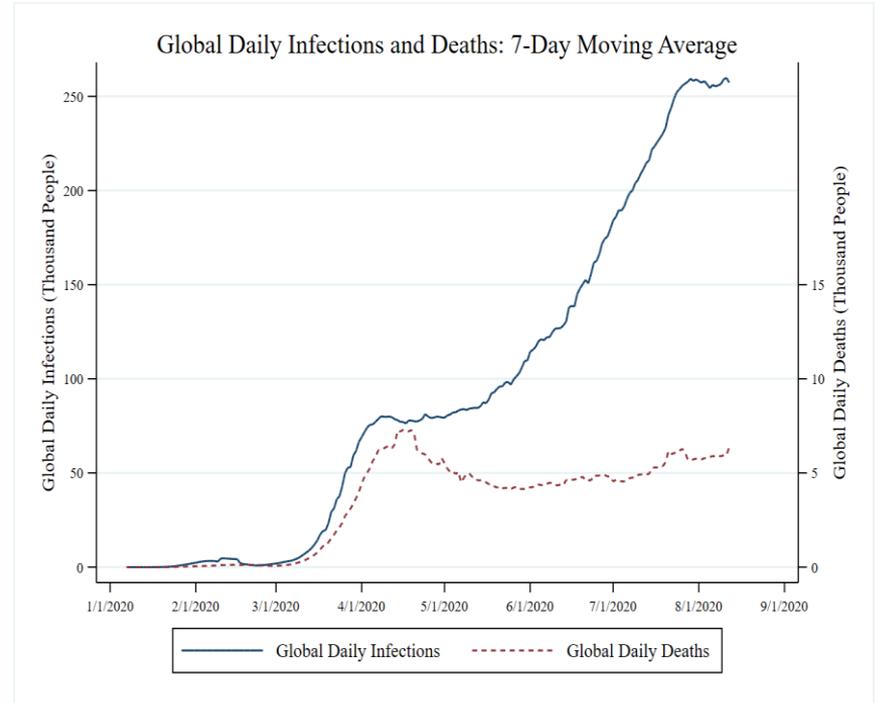
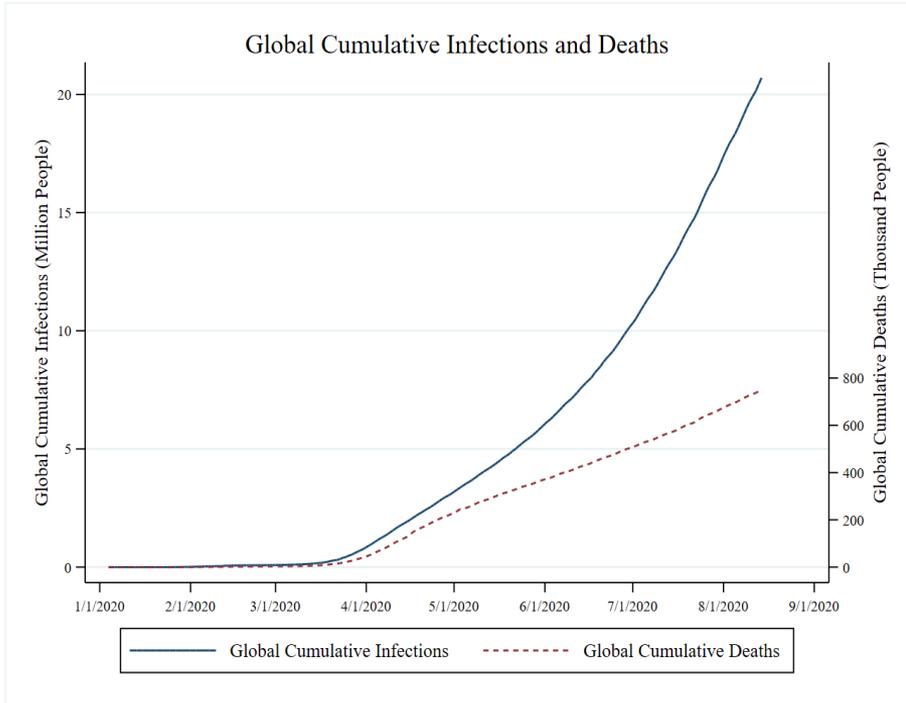


# Roadmap

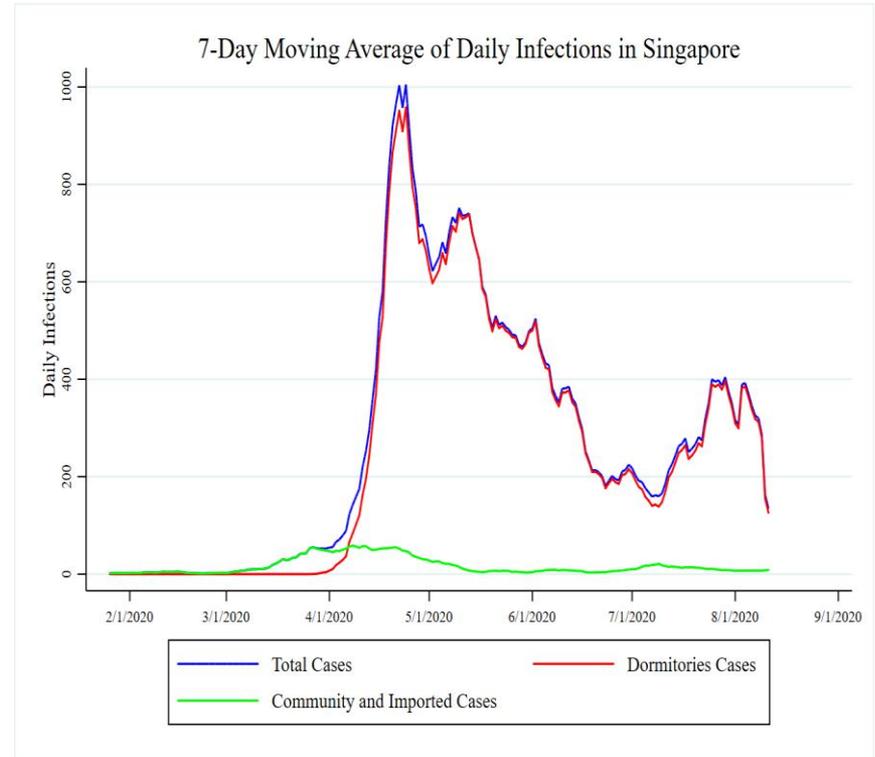
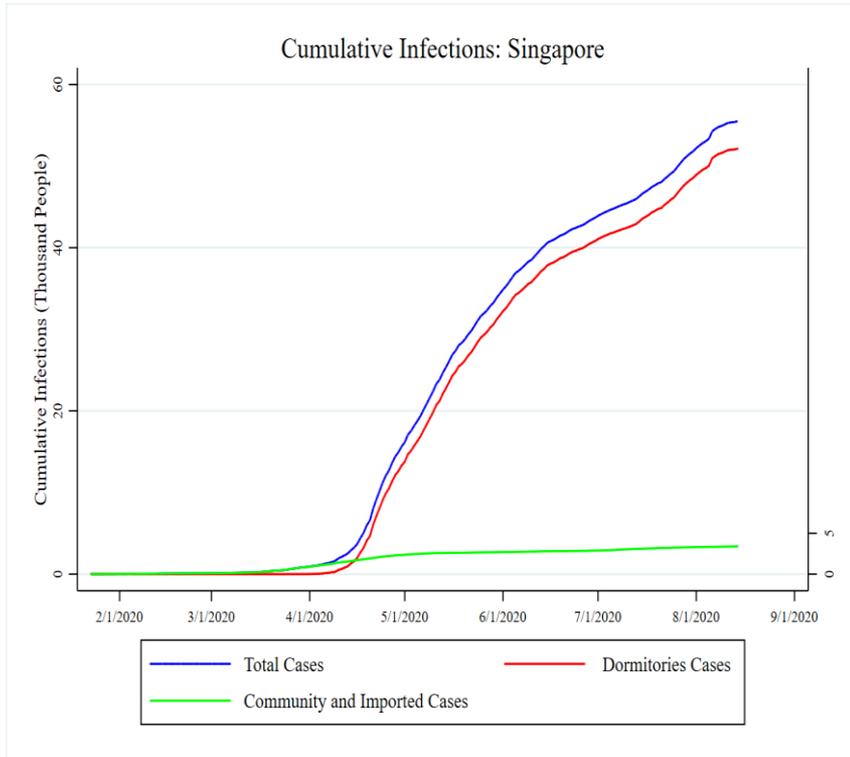
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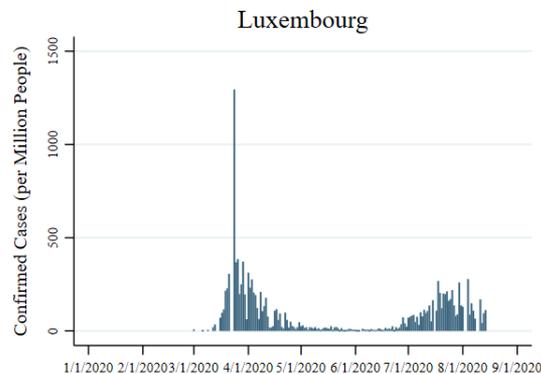
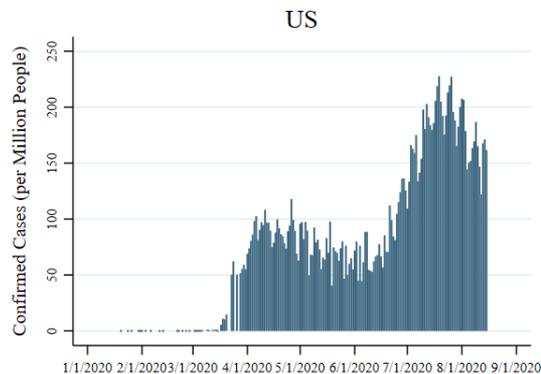
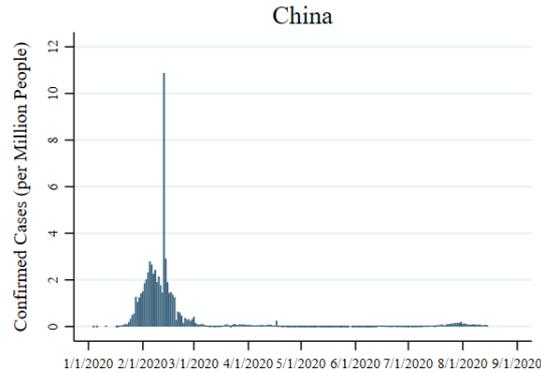
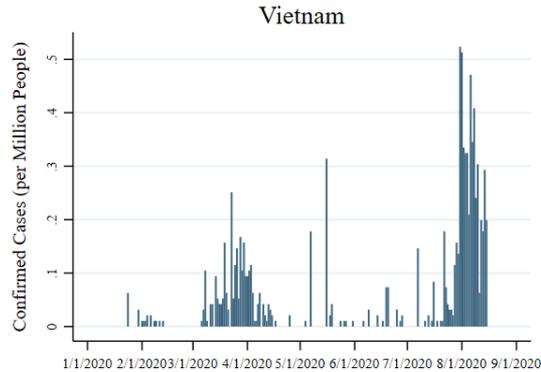
# COVID-19 Situation: Global



# COVID-19 Situation: Singapore



# Huge Cross-country Heterogeneity



- Why there is such a substantial variation in infections and deaths across different countries?
- How well a particular country, for example, Singapore, has been tackling COVID-19, compared with others?

**Table 1 Cumulative Infections and Deaths: Summary Statistics and Worst and Best 10 Countries**

Variables	Unit	Mean	Std. D	Min	Max	Worst 10	Value	Best 10	Value	Form in regression
Cumulative infections	per million people	3,998	5,788	3	41,174	Qatar	41,174	Laos	3	log
						Chile	20,402	Myanmar	7	
						Panama	18,781	Vietnam	10	
						US	15,927	Cambodia	17	
						Peru	15,880	Uganda	32	
						Brazil	15,395	Thailand	49	
						Armenia	13,991	Angola	60	
						Luxembourg	12,119	Burkina Faso	63	
						South Africa	10,023	China	64	
						Israel	9,962	Mozambique	92	
Cumulative deaths	per million people	131	195	0	867	Belgium	867	Laos	0	log
						Peru	802	Bhutan	0	
						UK	703	Cambodia	0	
						Spain	611	Myanmar	0	
						Italy	583	Vietnam	0	
						Sweden	568	Uganda	0	
						Chile	552	Sri Lanka	1	
						US	508	Mozambique	1	
						Brazil	503	Rwanda	1	
						France	452	Thailand	1	
Case fatality rate (CFR)	ratio	3.3%	3.2%	0.0%	15.4%	France	15.4%	Laos	0.0%	ratio
						UK	14.9%	Bhutan	0.0%	
						Italy	14.0%	Cambodia	0.0%	
						Belgium	13.0%	Singapore	0.0%	
						Hungary	12.6%	Qatar	0.2%	
						Mexico	10.9%	Botswana	0.2%	
						Netherlands	10.1%	Rwanda	0.4%	
						Spain	8.5%	Sri Lanka	0.4%	
						Canada	7.4%	Nepal	0.4%	
						Sweden	6.9%	Iceland	0.5%	

- Why there is such a substantial variation in infections and deaths across different countries?

- How well a particular country, for example, Singapore, has been tackling COVID-19, compared with others?

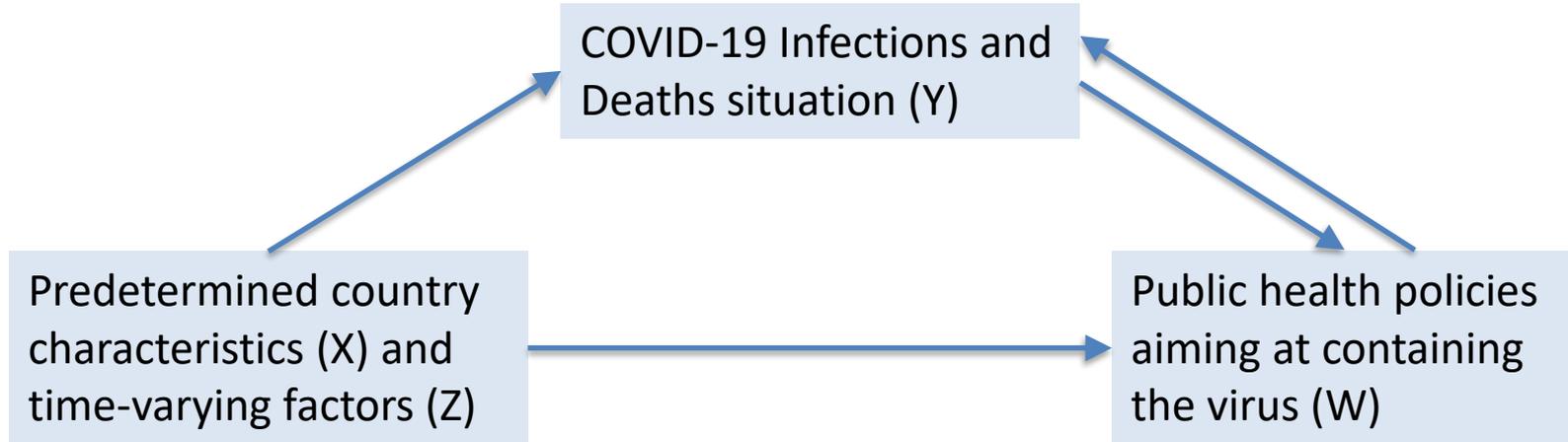


# Roadmap

- A closer look at Global and Singapore pandemic
- **Singapore's containment policy ranking**
- Singapore's economic policy evaluation
- A K-shaped recovery for Singapore



# Main Research Ideas



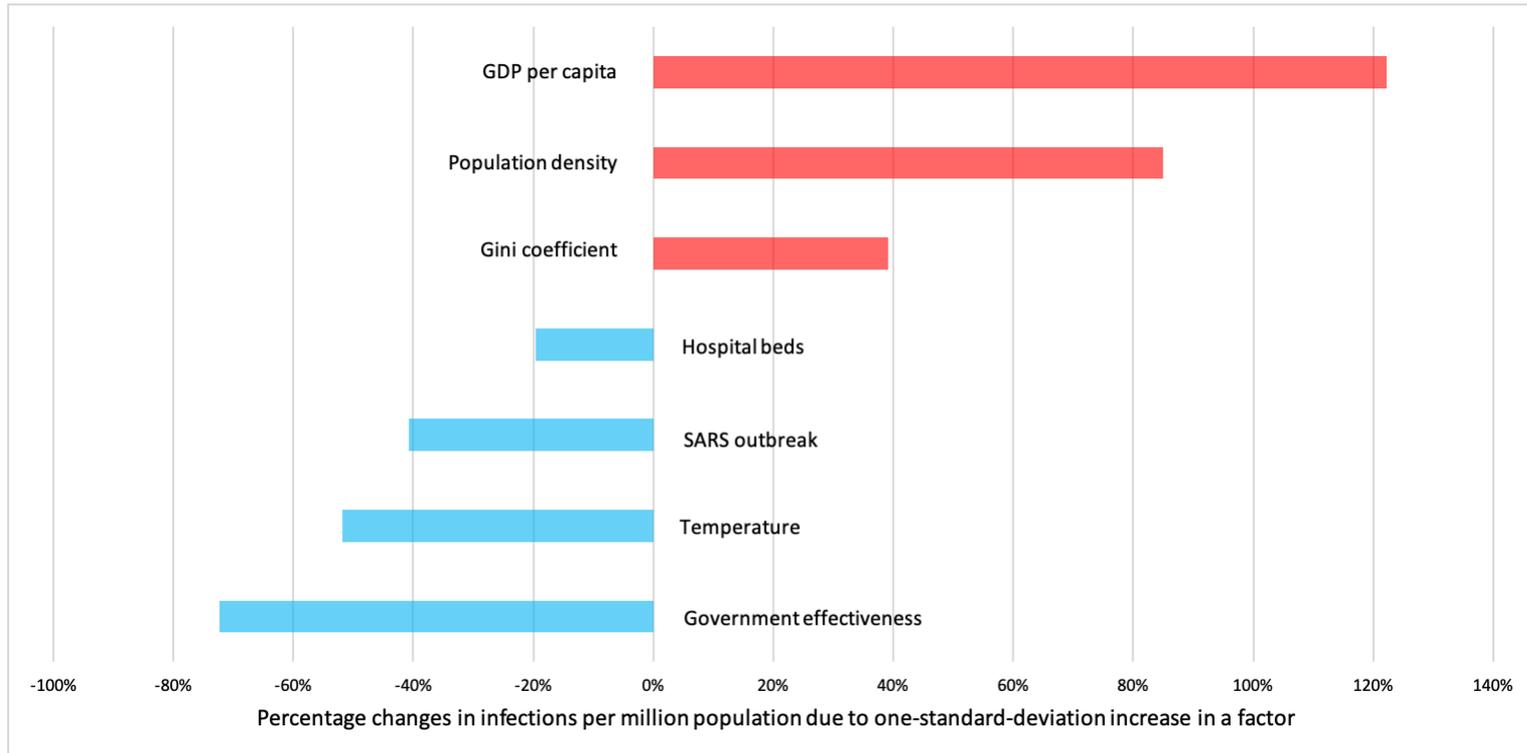
Structural equations:  
 $Y = F(X, Z, W); W = G(Y, X, Z)$   
Reduced-form equation:  
 $Y = H(X, Z)$

# Regression Analyses

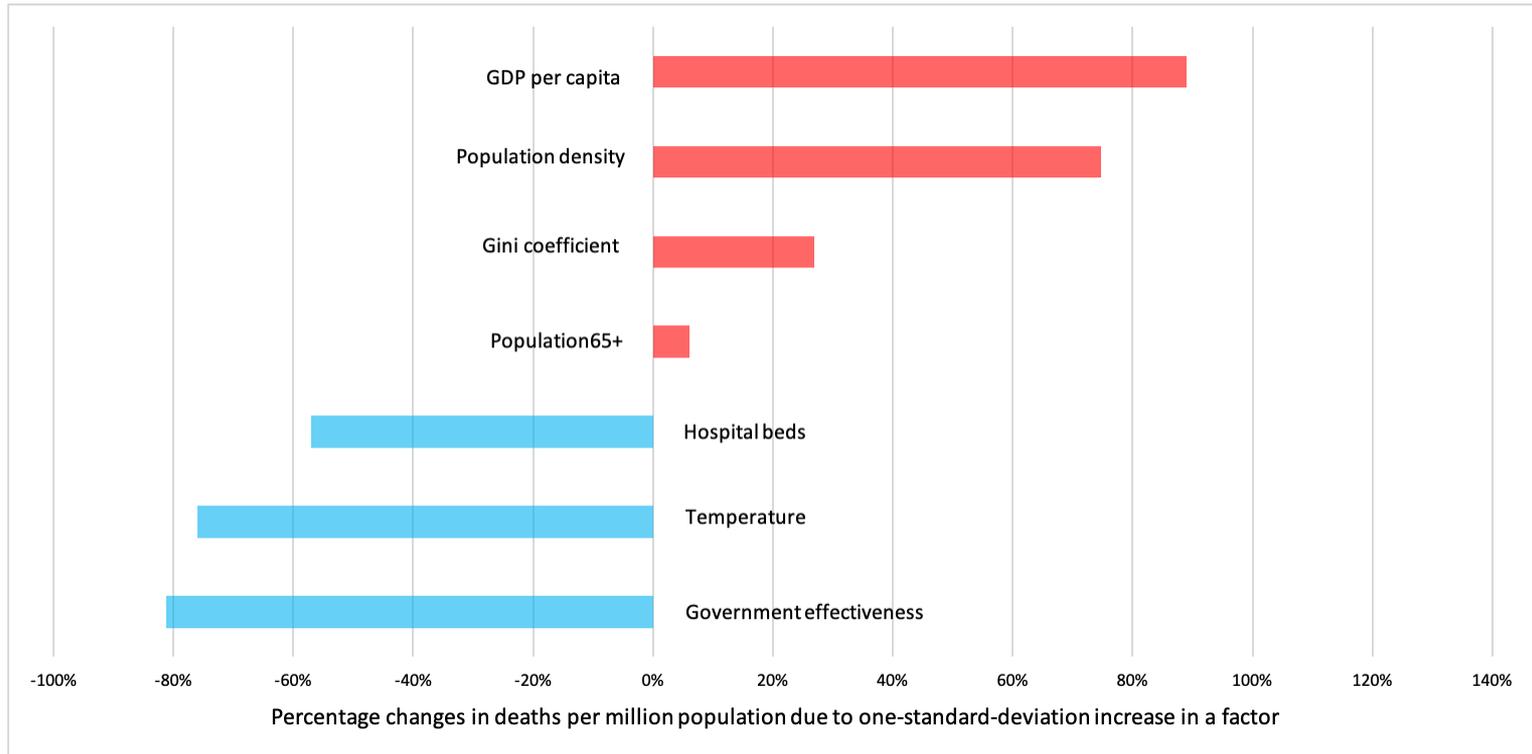
$$Y_{i,t} = \beta_1 X_i + \beta_2 Z_{i,t} + f(\text{Days}_{i,t}) + \varepsilon_{i,t}$$

- $Y_{i,t}$ : cumulative infections or deaths per million people
- $\text{Days}_{i,t}$ : days since the first infection or death was reported
- $X_i$ : a set of predetermined variables
  - Demographic conditions/Geographic conditions
  - Economic conditions/Global interdependency
  - Healthcare conditions/Government effectiveness
- $Z_{i,t}$ : additional time-varying control variables
  - Rest of world infection, capturing nature of a global pandemic
  - Test ratio of COVID-19, addressing underreporting concerns
- Sample: 100 countries ( $i$ ), from 4 Jan to 15 Aug ( $t$ )

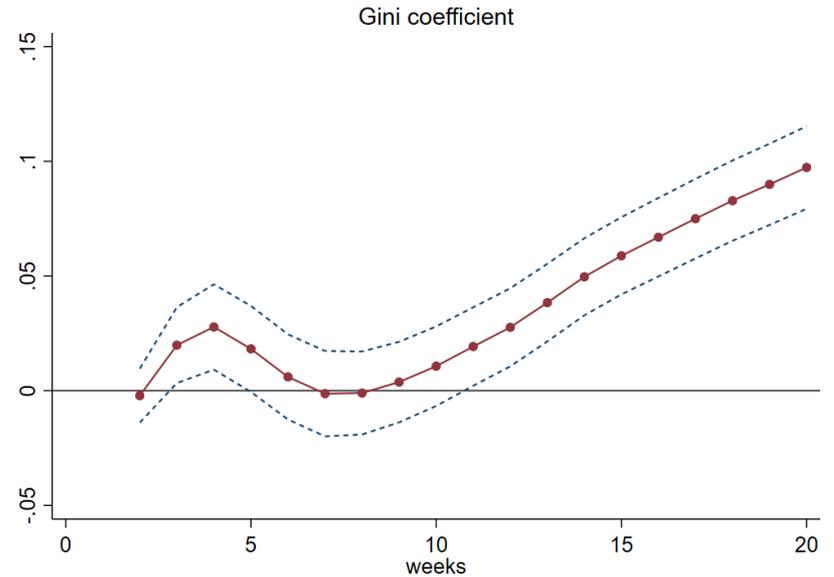
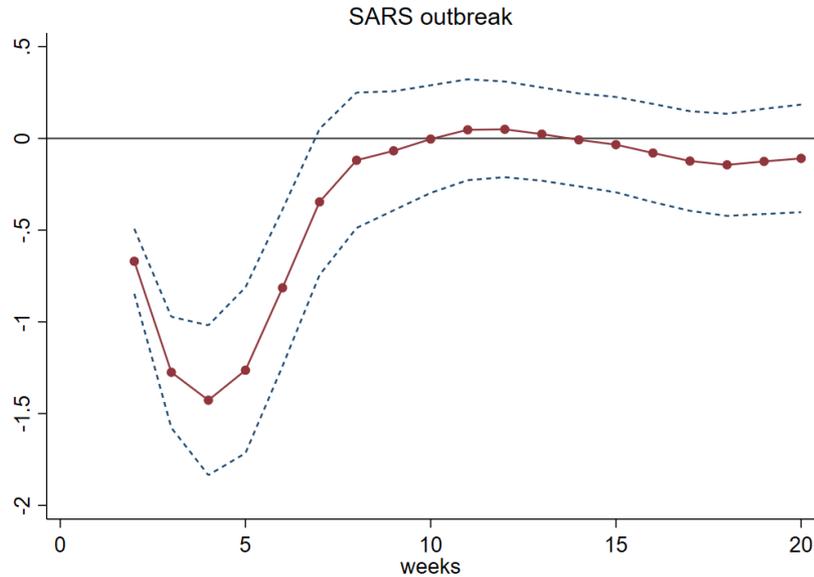
# Risk and Protective Factors for Infections



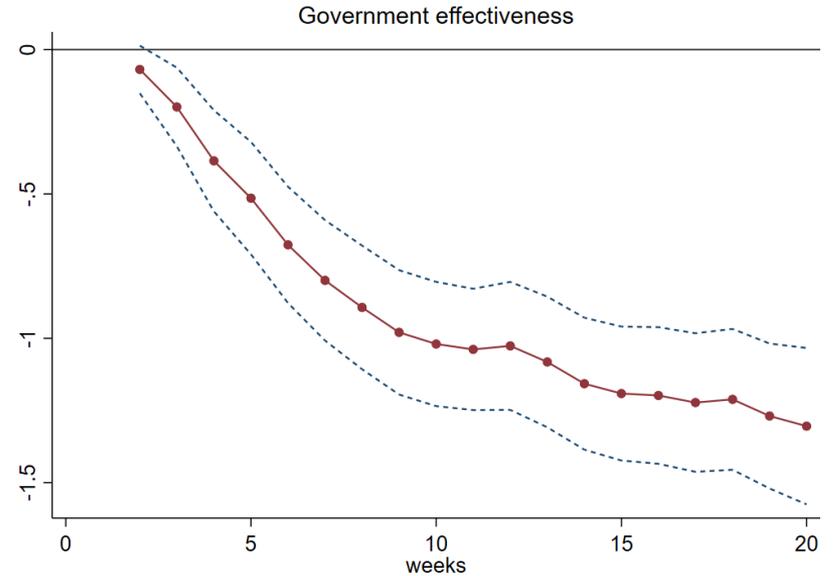
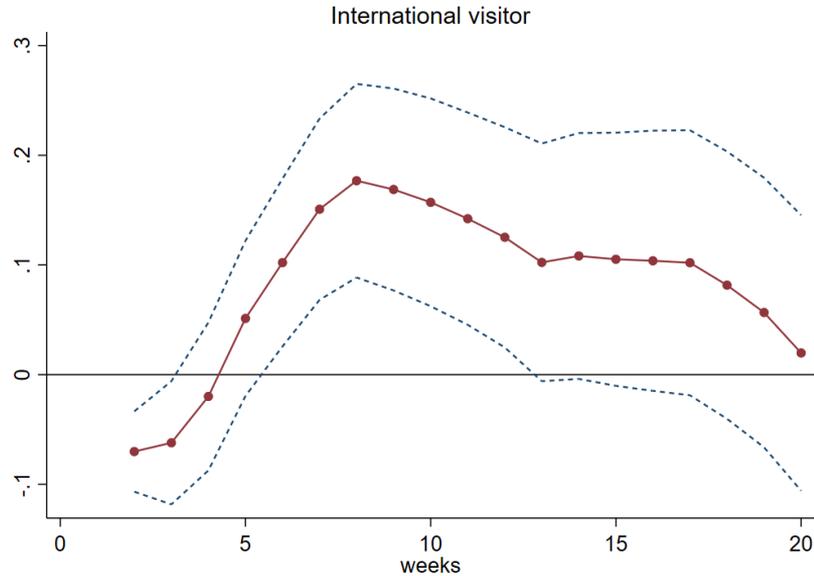
# Risk and Protective Factors for Deaths



# Factor Importance Varies by Pandemic Course: Infection

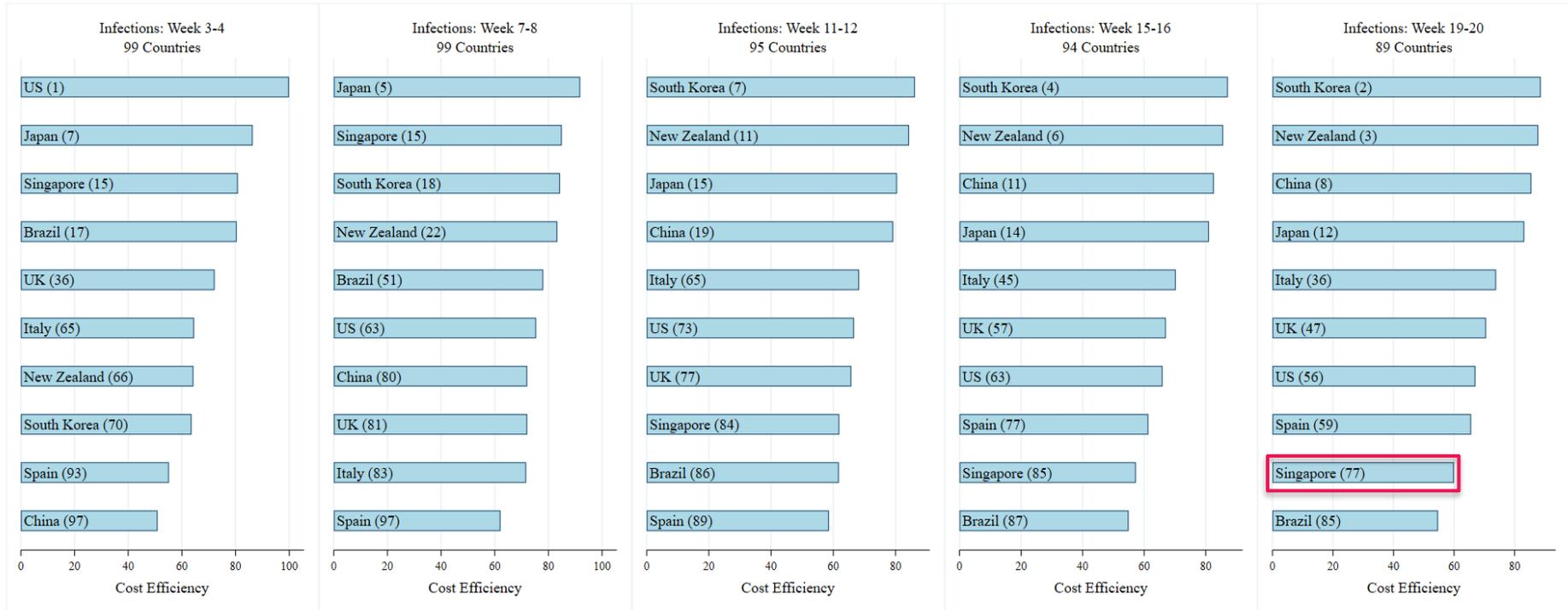


# Factor Importance Varies by Pandemic Course: Death



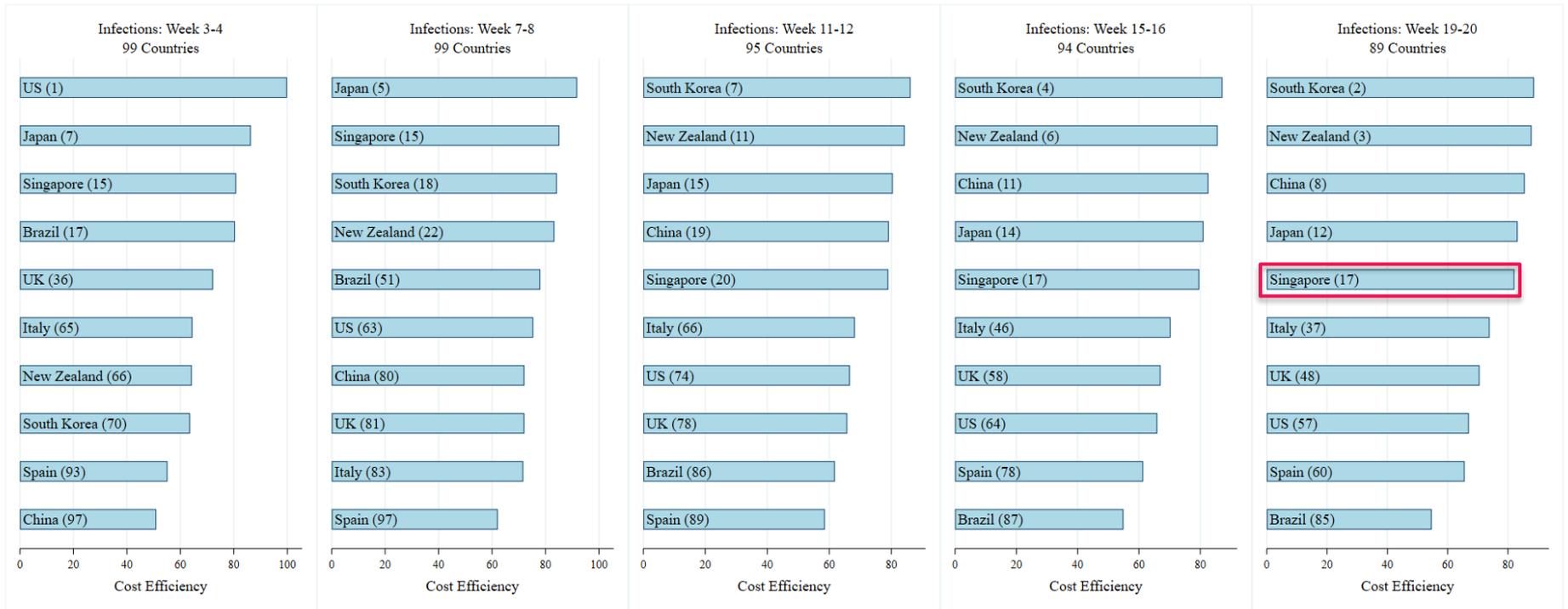
# Efficiency Ranking Pandemic Policy: Infection

## -- Singapore with total cases

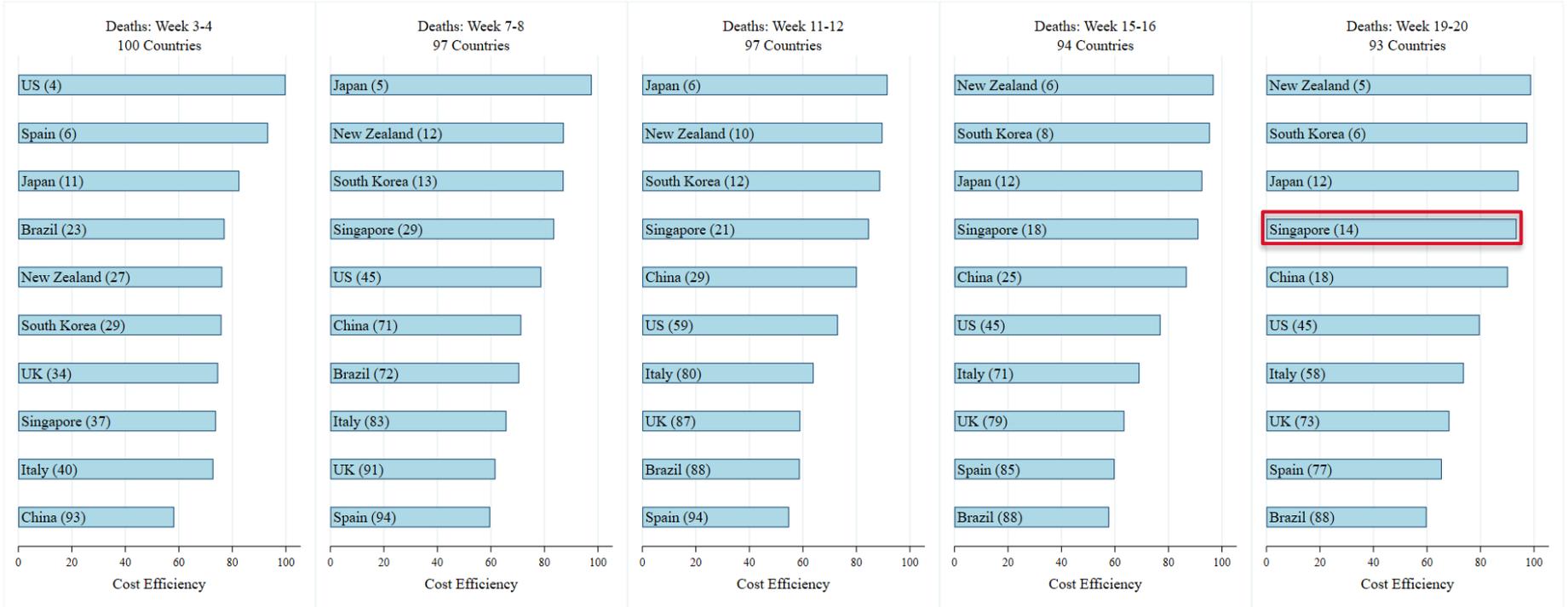


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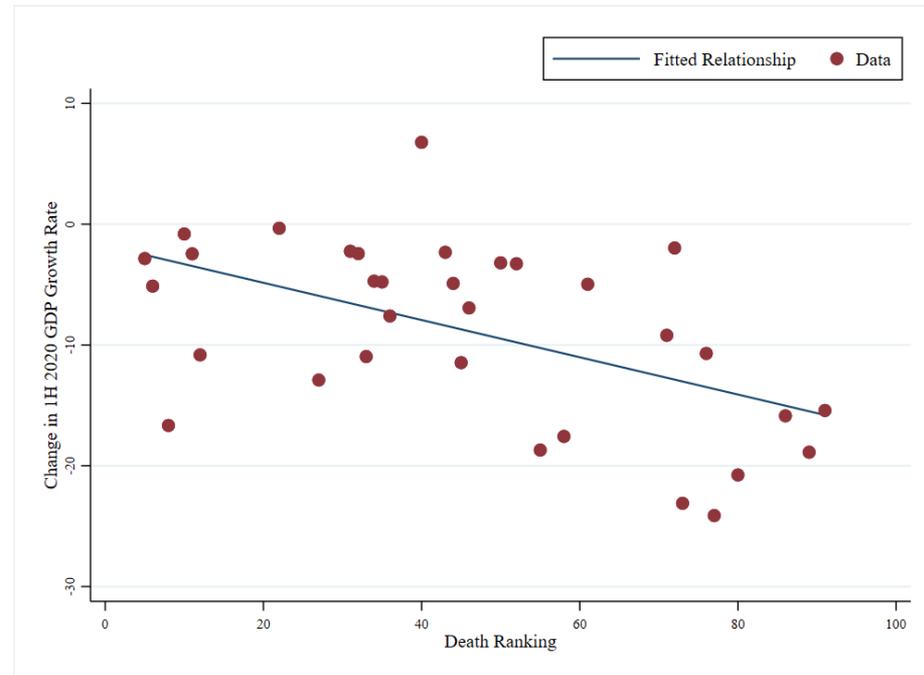
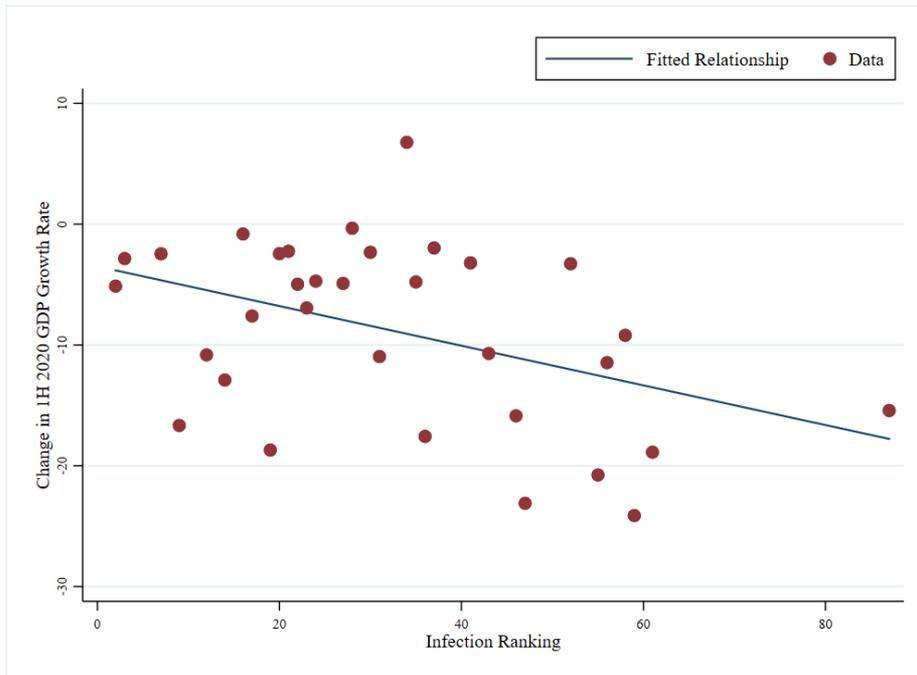
## -- Singapore with community and imported cases



# Efficiency Ranking Pandemic Policy: Death



# (Efficient) Pandemic Policy and (Less) GDP Loss

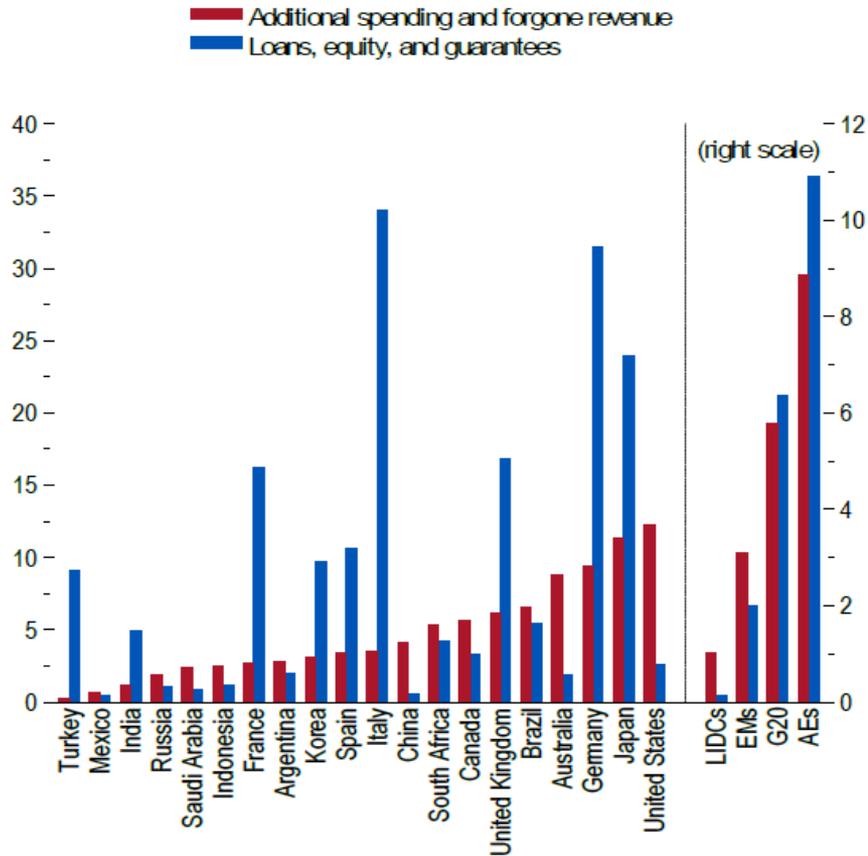


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# Fiscal Stimulus: Global



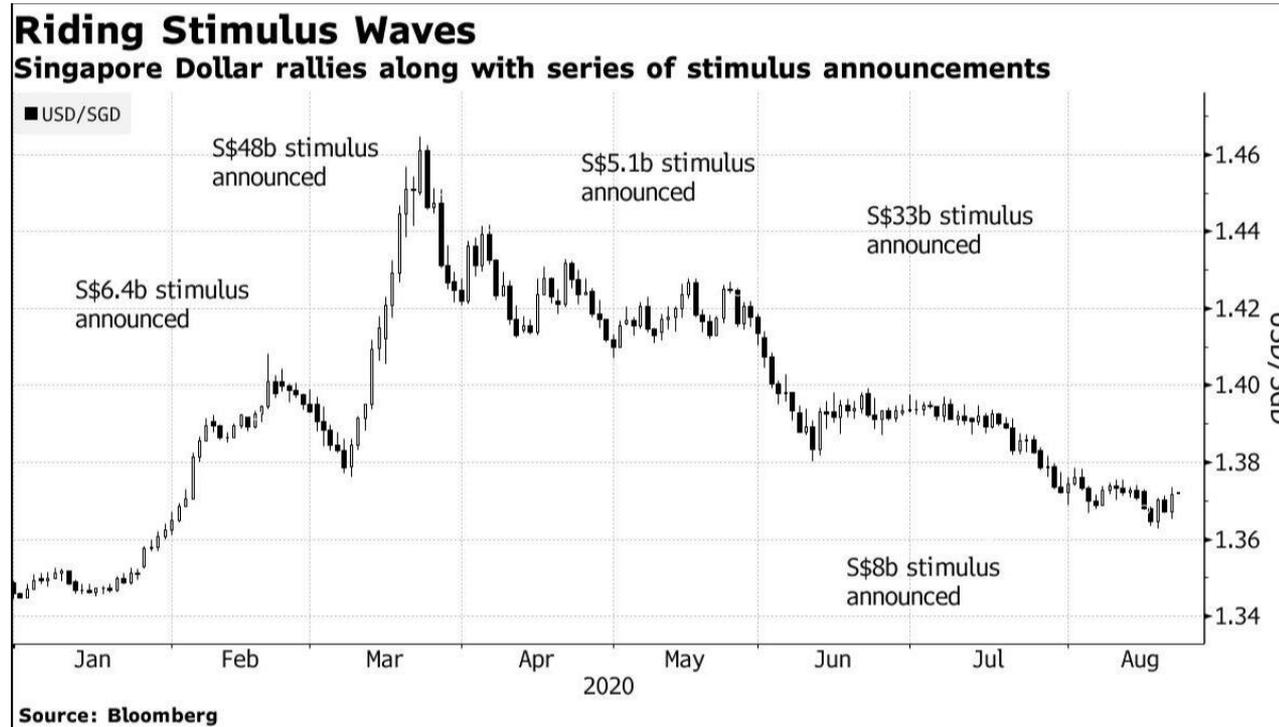
- Announced fiscal stimulus are estimated at near \$11 trillion globally
  - Half are additional spending and forgone revenue
  - Half are liquidity support, such as loans, equity injections, and guarantees
- Budgetary measures as a share of GDP
  - 6% for G20
  - 9% for Advanced economies

# Fiscal Stimulus: Singapore

Date	Name	Amount
Feb 18	UNITY BUDGET	S\$6.4 billion
Mar 26	RESILIENCE BUDGET	S\$48.4 billion
Apr 7	SOLIDARITY BUDGET	S\$5.1 billion
May 26	FORTITUDE BUDGET	S\$33.0 billion
Aug 17	SCALED-BACK JSS	S\$8.0 billion

- A total of S\$101 billion fiscal injection
- **20% of 2020 GDP**
- Mainly draw on national reserves
- Some reallocating from other areas

# Evaluating Singapore's Fiscal Stimulus



- Immediate effect: SGD appreciation relative to USD, an indication of confidence

# Evaluating Singapore's Fiscal Stimulus

- Short term: save lives and save livelihoods

Impact on economy	2020	2021
Real GDP level (percentage deviation)	+5.5	+4.1
Resident unemployment rate (percentage-point deviation)	-1.7	-2.9

Source: MAS Estimates<sup>9</sup>

- Medium term: facility recovery and prevent knock-on effects
- Long term: transform the structure and narrow the gap
- Too early for a thorough policy evaluation at this point

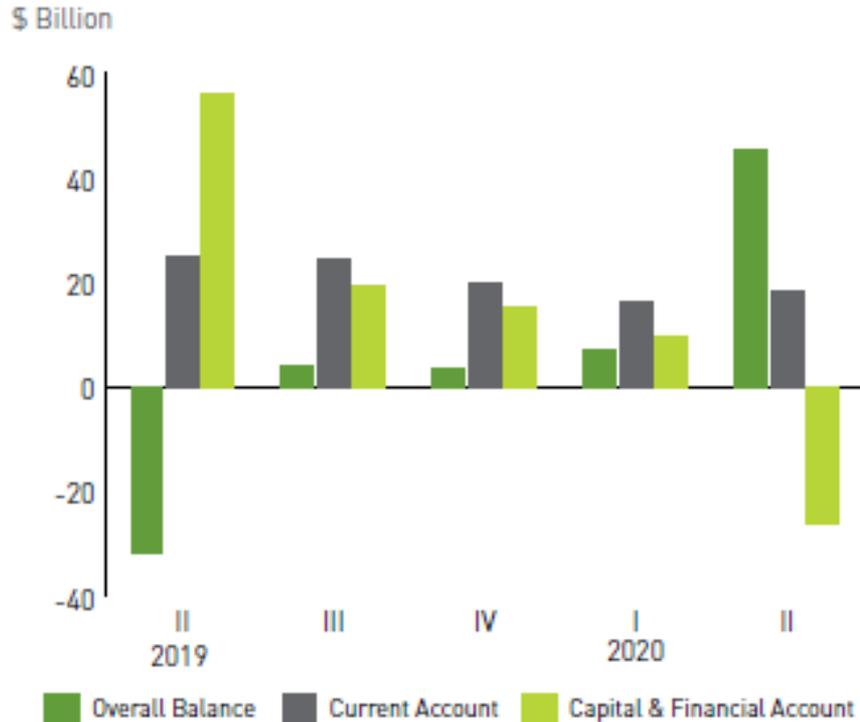
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# The Upside of the Recovery

Exhibit 1.17: Balance of Payments



- Exceptionally strong fiscal condition
- Exceptionally strong balance of payments
- Combined fiscal and foreign exchange reserves remain between 200-300% of GDP
- Political stability and favorable doing business environment
- Fitch Ratings has affirmed Singapore at AAA with a stable outlook
  
- Source: MTI, Fitch Ratings

# The Downside of the Recovery

	2019				2020	
	II	III	IV	Ann	I	II
<b>Merchandise Trade</b>	-2.2	-6.7	-5.3	-3.2	0.5	-15.2
<b>Merchandise Exports</b>	-4.6	-7.3	-4.3	-4.2	-1.4	-13.8
Domestic Exports	-10.6	-13.1	-11.5	-10.5	-6.4	-21.1
Oil	-2.9	-19.7	-21.5	-12.9	-28.9	-67.7
Non-Oil	-14.7	-9.6	-5.7	-9.2	5.4	6.5
Re-Exports	2.0	-1.7	2.8	2.3	3.2	-6.8
<b>Total Services Trade</b>	1.9	0.6	2.5	1.3	-3.2	-22.2
Services Exports	1.9	1.9	4.5	2.2	-3.0	-20.3

- A small and open economy
- Highly dependent on global recovery
- Highly sensitive to oil price and oil demand
- Highly sensitive to global supply chain disruption
- Source: MTI

# Un Uneven Impact across Sectors & Industries

Exhibit 1.1: GDP and Sectoral Growth Rates in 2Q 2020

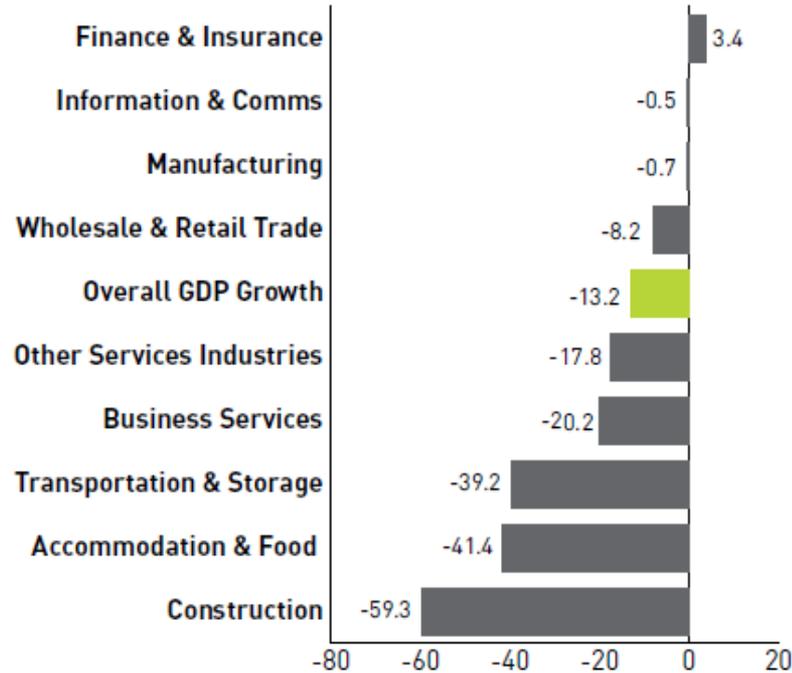
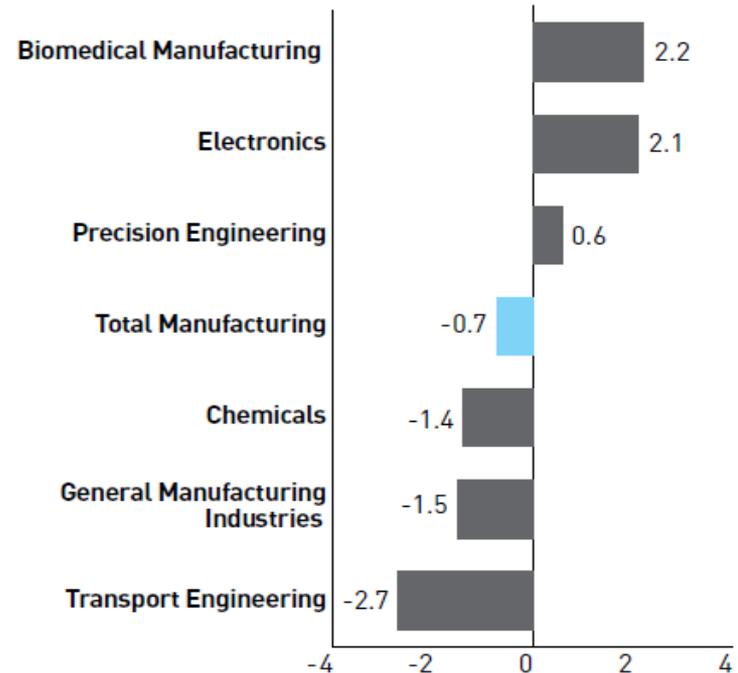
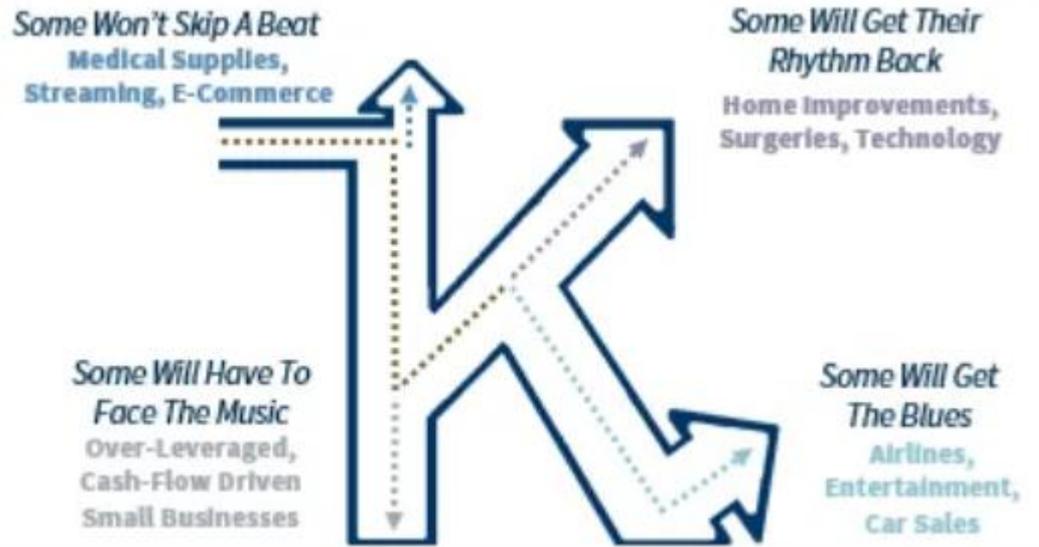


Exhibit 2.2: Percentage-Point Contribution to Manufacturing Sector's Growth in 2Q 2020

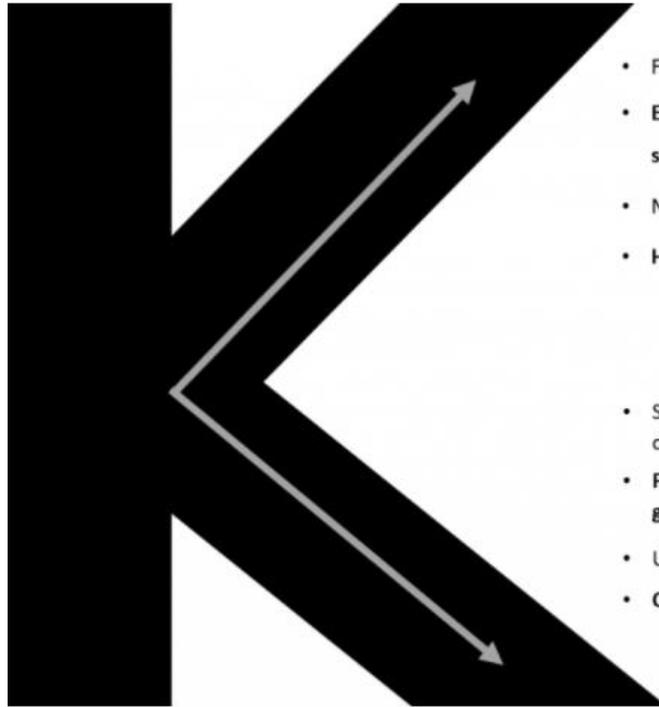


# A K-Shaped Recovery: Global



- More and more data points indicate the uneven recovery
  - Assets market
  - Labor market
  - Sector and industry
- “The Finance 202: Economists talking up 'K shaped' recovery” – The Washington Post

# A K-Shaped Recovery: Singapore



- Fintech grew 5% in H1 2020
- E-commerce companies seeing a boom in sales
- New private home sales jumped 8.2% MoM
- High-income earners maintain their salaries
  
- Service sectors see a drop in footfall and customers
- F&B and retail sectors seeing businesses go bankrupt
- Unemployment rate at a 10-year high
- Curbs on international travel



Image Credit: Vulcan Post

