

Lecture 20:

5.3. East Asian Growth Miracles

Brad DeLong

Department of Economics & Blum Center, U.C. Berkeley; & WCEG

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for presentation: Th 2020-04-09

Original course by Melissa Dell (Harvard Econ 1342), revised by Brad DeLong

<<https://github.com;braddelong/public-files/blob/master/econ-135-lecture-20.pptx>>

<<https://www.icloud.com/keynote/0xRRhkj7cn2vsAXbYKCH4E9Ug>>

Discussion

East Asian Miracles

- What strikes you as important here?

East Asian Miracles

The Setting:

- Asia on the “downside” of the Malthusian cycle when western Europe erupts into the eastern Pacific in the 1800s
 - Malthusian poverty means no middle class to demand domestic manufactures
 - Power gradient means no ability to impose tariffs
 - Lack of a powerful *bourgeoisie* means rule by princes for whom intensive economic growth is not a priority
 - “Confucian” religion means right orientation more important than rationalization of techniques and methods
- As Melissas Dell says: if we were sitting here in the 1950s, we would not have predicted the East Asian Miracle:
 - South Korea was a basket case, with a highly corrupt government, that people assumed would be permanently dependent on foreign aid
 - The other Tigers weren’t faring much better
 - We would have likely guessed, if anything, that the Philippines would be the growth miracle:
 - It had the highest rates of education (primary, second, and tertiary) in Asia
 - It had the highest rates of indigenous entrepreneurship
 - And it had its health-care sector and other links with the US

26:45 minutes of audio

Principal Readings

- **Peter Evans** (1995): Embedded Autonomy: States and Industrial Transformation, chapter 1 <<https://delong.typepad.com/files/evans-embedded-i.pdf>>
- **Yingyi Qian** (2001): How Reform Worked in China <<https://delong.typepad.com/files/qian-reform.pdf>>

Proximate Causes of East Asian Miracles

Factor accumulation and technology transfer:

- Factor accumulation
 - Highest savings rates in the world
 - Massive educational expansion
 - Rapid transfer from farm to city, and from agriculture to manufacturing
- Where did demand for manufactured goods come from?
 - The Japanese state: rich country-strong army
 - The open world economy: neocolonial origins of comparative development
 - State capitalism with Chinese characteristics (and utopian socialist aspirations)
- Yet also:
 - Getting institutions and incentives right
 - Success at technology transfer
 - Avoiding rent-seeking and other elite-corruption political economy traps

TABLE II
EDUCATIONAL ATTAINMENT OF THE WORKING POPULATION (PERCENT)

	Hong Kong		Singapore		South Korea		Taiwan	
	1966	1991	1966	1990	1966	1990	1966	1990
None	19.2	5.6	55.1	§	31.1	6.4	17.0	4.5
Primary	53.6	22.9	28.2	33.7	42.4	18.5	57.2	28.0
Secondary+	27.2	71.4	15.8	66.3	26.5	75.0	25.8	67.6

Self-taught are included under primary. Hong Kong, Korean, and Taiwanese data refer to highest level of education "attended" rather than completed. All percentages are calculated net of those reported as "unknown."

TABLE XIII
AVERAGE TOTAL FACTOR PRODUCTIVITY GROWTH
(PERCENT PER ANNUM)

	Hong Kong (1966-1991)	Singapore (1966-1990)	South Korea (1966-1990)	Taiwan (1966-1990)
Economy*	2.3	0.2	1.7	2.1
Manufacturing#	NA	-1.0	3.0	1.7
Other industry	NA	NA	1.9	1.4
Services	NA	NA	1.7	2.6
Private sector	NA	NA	NA	2.3

NA-not available. *In the case of Korea and Taiwan, agriculture is excluded. #In the case of Singapore, the years are 1970-1990.

Investment as a % of GDP

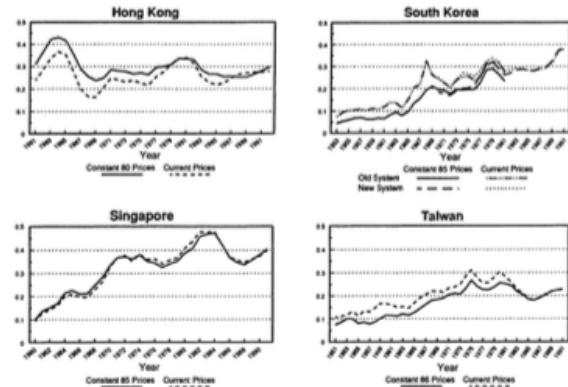


FIGURE I
I/GDP Ratios

Source: Alwyn Young (1995) "The Tyranny of the Numbers: Confronting the Statistical Realities of the East Asian Growth Experience," Quarterly Journal of Economics, 110, 641-680.

Hypotheses?

A good hypothesis will have to fit with the Japanese and the coastal China miracles as well as with the “four tigers” experience:

- Japanese colonial policy
- Inequality
- Industrial policy
- Trade policy
- Leaders matter (particularly in non-democracies)
- State capacity: Peter Evans...

State Capacity and Developmental States

Petr Evans: *Embedded Autonomy*:

- “Industrial policy” was a success in East Asia
 - A bad failure elsewhere.
 - Save Germany, and America, and Meiji Japan
- Evans bets that to understand why, we need to focus on the state:
- Melissa Dell calls out this passage: Evans:
 - “Until less hierarchical ways of avoiding a Hobbesian world are discovered, the state lies at the center of solutions to the problem of order...the contradiction between the ineradicable necessity of the state in contemporary social life and the grating imperfection with which states perform is a fundamental source of frustration. Dreams of cannibalizing bureaucrats are one response. Analyzing what makes some states more effective than others offers less immediate satisfaction but should be more useful in the long run
- We need rules—for property, for exchange, for the provision of public goods
- Attempts to dismantle the state risk perverse consequences: cf. communism
- 20th century states as key to different paths of historical development

The State and Economic Order

Comparative advantage is *dynamic*:

- Social and political institutions determine your niche
- “Leading sectors” to move to a better niche
 - Powers
 - Limits
 - Not “how much” but “what kind” of state intervention
- States on the continuum from predatory to developmental
 - Developmental states: taming elites via lowering risks of and creating incentives to engage in transformative investments
 - Evans seeks to trace lines from variation in state structure and state-society relations to variation in industrial policy outcomes
- Predator states: let us look for a moment at the DRC...

Developmental States and Embedded Autonomy

Post-WWII Japan:

- “Powerful, talented, and prestige-laden bureaucracy...”
- Social network-based career strategies
- Relative autonomy of the bureaucracy
 - Individual success springs from advancing societal goal: rich country—(once) strong army
 - Bureaucracy needs to be *embedded* in society—so that it understands it and help build it up—but *autonomous*—so that it is not under the control of parasitic hereditary elites—and *mission-oriented*
 - How is this different from Stalinist bureaucracy? Using rather than destroying the market; connecting rather than atomizing society
- south Korea and post-WWII Taiwan

How Do We Think About the State's Role Here?

Ideal Types:

- (1) Regulator, (2) producer, (3) midwife, (4) gardener...
- (3) & (4) work much better than (1) & (2), it seems...
- (1) & (2) arise from negative conceptions of the private sector:
 - (1) State as regulator becomes preoccupied with policing rather than growing the private sector...
 - (2) State as producer: risky—bureaucratic imperatives of expansion even where inefficient, and levers of control allow it to do so...
- (3) & (4) spring from greater optimism about the vitality of private capital:
 - (3) Midwife: infant-industry protection and encouragement. In the US, DARPA.
 - (4) Gardener: firms that need rather encouragement and assistance to advance the sector. But the existence of a directly interested private sector increases the risk for state capture, and thus crashing into rent seeking.
- What are the rules? There are no rules! It depends!!

Is This All Just B-School Blather?

If you are like me, you may be suspicious at this point...

- What is B-school blather? A combination of generalities, tautologies, and utopian demands...
- Perhaps better to focus on what to avoid...
- Abandon all hope of running a successful developmental-state industrial policy if:
 - You have landlords (or some other parasitic class interpenetrated with those from whose ranks your bureaucrats are drawn)
 - You do not have a shared ideology of economic development
 - You do not have the elite education and examination system you need
 - Government service is not respected
 - You cannot see the goal
 - You lack the factor-mobilization prerequisites
 - You lack the external market access
 - You lack the ability to judge success on the ground
 - In some ways, the best of all possible industrial policies is an undervalued currency, access to global markets and an ability to build infrastructure
- But what to do once you have abandoned hope?
 - Neoliberal bet—low odds bet; counsel of despair...
 - Or try to build the preconditions for a developmental state...

Readings

- **Peter Evans** (1995): Embedded Autonomy: States and Industrial Transformation, chapter 1 <<https://delong.typepad.com/files/evans-embedded-i.pdf>>
- **Yingyi Qian** (2001): How Reform Worked in China <<https://delong.typepad.com/files/qian-reform.pdf>>
- **Robert C. Allen *et al.*** (2011): Wages, Prices, and Living Standards in China, 1738–1925: in Comparison with Europe, Japan, and India, *Economic History Review* 64 (2011): 8-38 <https://delong.typepad.com/allen_wpls_china.pdf>
- **Chiu Yu Ko, Mark Koyama, and Tuan-Hwee Sng** (2018): Unified China and Divided Europe, *International Economic Review* 59,1 (2018): 285-327 <<https://delong.typepad.com/unified-china.pdf>>
- **Tuan-Hwee Sng and Chiaki Moriguchi** (2014): Asia's Little Divergence: State Capacity in China and Japan before 1850, *Journal of Economic Growth* 19,4 (2014): 439-470 <<https://delong.typepad.com/asia-divergence.pdf>>

Wages, Prices, and Living Standards in China, 1738–1925

- Robert C. Allen *et al.* (2011): Wages, Prices, and Living Standards in China, 1738–1925: in Comparison with Europe, Japan, and India, *Economic History Review* 64 (2011): 8-38
[<https://delong.typepad.com/allen_wpls_china.pdf>](https://delong.typepad.com/allen_wpls_china.pdf):
 - In the eighteenth century, the real income of building workers in Asia was similar to that of workers in the backward parts of Europe but far behind that in the leading economies in north-western Europe. Real wages stagnated in China in the eighteenth and early nineteenth centuries and rose slowly in the late nineteenth and early twentieth, with little cumulative change for 200 years. The income disparities of the early twentieth century were due to long-run stagnation in China combined with industrialization in Japan and Europe...

Wages, Prices, and Living Standards in China

Robert C. Allen *et al.* (2011): Wages, Prices, and Living Standards in China <https://delong.typepad.com/allen_wpls_china.pdf>:

- Expects “normal” politics:
- Overthrow of entrenched hierarchies that hold back prosperity in the interests of a parasitic few...

Unified China and Divided Europe

- **Chiu Yu Ko, Mark Koyama, and Tuan-Hwee Sng** (2018): Unified China and Divided Europe, *International Economic Review* 59,1 (2018): 285-327 <<https://delong.typepad.com/unified-china.pdf>>:
 - Severe and unidirectional threat of external invasion fostered political centralization in China, while Europe faced a wider variety of moderate external threats and remained politically fragmented.... Political centralization in China led to lower taxation and hence faster population growth during peacetime than in Europe. But it also meant that China was relatively fragile in the event of an external invasion. Our results are consistent with historical evidence of violent conflicts, tax levels, and population growth in both China and Europe...

Unified China and Divided Europe

Chiu Yu Ko, Mark Koyama, and Tuan-Hwee Sng (2018):
Unified China and Divided Europe <<https://delong.typepad.com/unified-china.pdf>>:

- Marx in transition from German Idealist philosopher to French-style political activist to British political economist...
-

Asia's Little Divergence: State Capacity in China and Japan before 1850

- **Tuan-Hwee Sng and Chiaki Moriguchi** (2014): Asia's Little Divergence: State Capacity in China and Japan before 1850, *Journal of Economic Growth* 19,4 (2014): 439-470 <<https://delong.typepad.com/asia-divergence.pdf>>:
 - Before 1850, both nations were ruled by stable dictators who relied on bureaucrats to govern their domains.... In a large domain, the ruler's inability to closely monitor bureaucrats creates opportunities for the bureaucrats to exploit taxpayers. To prevent overexploitation, the ruler has to keep taxes low and government small.... We find that the state taxed less and provided fewer local public goods per capita in China than in Japan. Furthermore, while the Tokugawa shogunate's tax revenue grew in tandem with demographic trends, Qing China underwent fiscal contraction after 1750 despite demographic expansion. We conjecture that a greater state capacity might have prepared Japan better for the transition from stagnation to growth...

Asia's Little Divergence

Sng and Moriguchi (2014): Asia's Little Divergence <<https://delong.typepad.com/asia-divergence.pdf>>:

- Marx in transition from German Idealist philosopher to French-style political activist to British political economist...
-

Big Ideas: Lecture 20: East Asian Miracles

Takeaways from this class:

Roadmap for the Next Two Weeks...

20. Th Apr 9: 5.3. East Asian Miracles

- **Read Before:** Peter Evans (1995): Embedded Autonomy: States and Industrial Transformation, chapter 1 <<https://delong.typepad.com/files/evans-embedded-i.pdf>>
- **Read Before:** Yingyi Qian (2001): How Reform Worked in China <<https://delong.typepad.com/files/qian-reform.pdf>>
- **Slides:** <<https://github.com;braddelong/public-files/blob/master/econ-135-lecture-20.pptx>>

21. Tu Apr 14: 5.4. Asia and Africa

- **Read Before:** Nathan Nunn (2008): The Long Term Effects of Africa's Slave Trades <https://dash.harvard.edu/bitstream/handle/1/3710252/Nunn_Long-TermEffects.pdf>
- **Read Before:** Sevkut Pamuk (2014): Institutional Change and Economic Development in the Middle East, 700-1800 <<https://delong.typepad.com/files/pamuk.pdf>>
- **Slides:** <<https://github.com;braddelong/public-files/blob/master/econ-135-lecture-21.pptx>>

6. Policy Issues

22. Th Apr 16: 6.1. "Deep Roots" vs. Path Dependence

- **Read Before:** Nathan Nunn (2012): Culture and the Historical Process <<https://delong.typepad.com/files/nunn-culture.pdf>>
- **Read Before:** Melissa Dell (2015): Path Dependence in Development: Evidence from the Mexican Revolution <<https://scholar.harvard.edu/files/dell/files/revolutiondraft.pdf>>
- **Slides:** <<https://github.com;braddelong/public-files/blob/master/econ-135-lecture-22.pptx>>

23. Tu Apr 21: 6.2. Growth and Fluctuations; Trade and Development, Foreign Aid

- **Read Before:** Barry Eichengreen (2015): Hall of Mirrors: The Great Depression, The Great Recession, and the Uses-and Misuses-of History, selections <<https://delong.typepad.com/files/eichengreen-mirrors.pdf>>
- **Read Before:** David Atkin (2014): Endogenous Skill Acquisition and Export Manufacturing in Mexico <<https://delong.typepad.com/files/atkin-skill.pdf>>
- **Slides:** <<https://github.com;braddelong/public-files/blob/master/econ-135-lecture-23.pptx>>

Roadmap Following...

Th Apr 23: 6.3. Populism, Plutocracy, Kleptocracy, & Neo-Fascism

- **Read Before:** Ernest Gellner (1973): *Nations & Nationalism*, selections <<https://delong.typepad.com/files/gellner-nations.pdf>>
- **Read Before:** Barry Eichengreen (2018): *The Populist Temptation Economic Grievance & Political Reaction in the Modern Era*, selections <<https://delong.typepad.com/files/eichengeen-populist.pdf>>

Tu Apr 28: 6.4. Global Warming

- **Read Before:** Melissa Dell *et al.* (2012): Temperature Shocks & Economic Growth: Evidence from the Last Half Century <https://scholar.harvard.edu/files/dell/files/aej_temperature.pdf>
- **Read Before:** Melissa Dell *et al.* (2014). What Do We Learn from the Weather? The New Climate-Economy Literature, selections <<https://economics.mit.edu/files/9138>>

Th Apr 30: 6.5. The Pace and Meaning of Economic Growth

- **Read Before:** William Nordhaus: Do Real-Output and Real-Wage Measures Capture Reality? <<https://www.nber.org/chapters/c6064.pdf>>
- **Read Before:** John Maynard Keynes: Economic Possibilities for Our Grandchildren <<<https://delong.typepad.com/files/keynes-persuasion.pdf>>>
- **Read Before:** Edward Bellamy (1887): *Looking Backward 2000-1887*, selections <<https://delong.typepad.com/files/bellamy-backward.pdf>>

7. Conclusion

Tu May 5: 7. Conclusion: The Future?

- **Read After:** Robert Allen (2011): *Global Economic History: A Very Short Introduction*, selections <<https://delong.typepad.com/files/allen-geh.pdf>>

W May 13 11:30-14:30: FINAL PAPER/PROJECT DUE

Catch Our Breath...

- Ask a couple of questions?
- Make a couple of comments?
- Any more readings to recommend?



Notes, etc....



Coronavirus!

Members of the public were told to avoid gatherings of 10 or more



ABC News



Trump warns coronavirus crisis could stretch into summer

Watch

Members of the public were told to avoid gatherings of 10 or more and older people and those with underlying condition were asked to stay home.

Coronavirus

Where we think we are, as of Th Apr 09:

- We really do not know
- No random samples...
- If we extrapolate out the past week straight-line log:
 - We will have 440,000 deaths in three weeks
 - But it is unlikely to be that bad
- Best thing I have read comes from Jim Stock <<https://drive.google.com/file/d/12MV466ZZy5xHir4xdPhoTrL1oQ8CbZU-/view>>:
 - The basic SIR epidemiological model of contagion
 - The effect of social distancing and business shutdowns on epidemic dynamics enters the model through a single parameter: the case transmission rate β
 - Re-express the model in terms of β and the asymptomatic (or not very symptomatic) hence non-tested rate—the fraction of the infected who are not tested
 - The COVID-19 non-testing rate is unidentified in our model
 - Estimates in the epidemiological literature range from 0.18 to 0.86.
 - The asymptomatic rate could be estimated accurately and quickly by testing a random sample
 - The optimal policy response and its economic consequences hinge critically on the asymptomatic rate

Coronavirus Extrapolations						
Date	Deaths	Cases = Deaths x 100	Constant Weekly New Cases	Cases = 5 x Cases(-3)	Cases = 20 x Cases (-3)	Cases = Cases (-3) x exp(3 x week ch)
2020-04-05	9618		3,102,000	4,809,000	19,236,000	55,832,145
2020-03-29	2484		869,400	1,242,000	4,968,000	53,654,400
2020-03-22	414		144,900	207,000	828,000	8,942,400
2020-03-15	69	961,800	19,800	34,500	138,000	128,966
2020-03-08	26	248,400	10,100	13,000	52,000	45,697,600
2020-03-01	1	41,400	370	500	2,000	100,000
2020-02-23		6,900	37	50	200	10,000
2020-02-16		2,600	4	5	20	
2020-02-09		100				
2020-02-02		10				
2020-01-26		1				
		0				

<https://www.incloud.com/numbers/0FzRFAnAOnIAin4VJWWiWIC0>

Coronavirus Cases:  United States

1,342,235

[view by country](#)

Coronavirus Cases:

364,059

Deaths:

74,554

Deaths:

10,792

Recovered:

278,182

Recovered:

19,536

USA State	Tot Cases/ 1M pop	Deaths/ 1M pop
USA Total	1,100	33
New York	6,662	243
New Jersey	4,626	113
Michigan	1,729	73
California	404	10
Louisiana	3,188	110
Massachusetts	2,026	38
Florida	662	12
Pennsylvania	1,016	13
Illinois	956	24
Washington	1,095	46
Texas	263	5
Georgia	710	22

Coronavirus II

We do not really know where we are, as of Mo Apr 6:

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2020-02-02		10				
2020-01-26		1				
		0				

<https://www.icloud.com/numbers/0FzRFAoAQoiAin4V.IWYWIWICQ>

Coronavirus Case



United States

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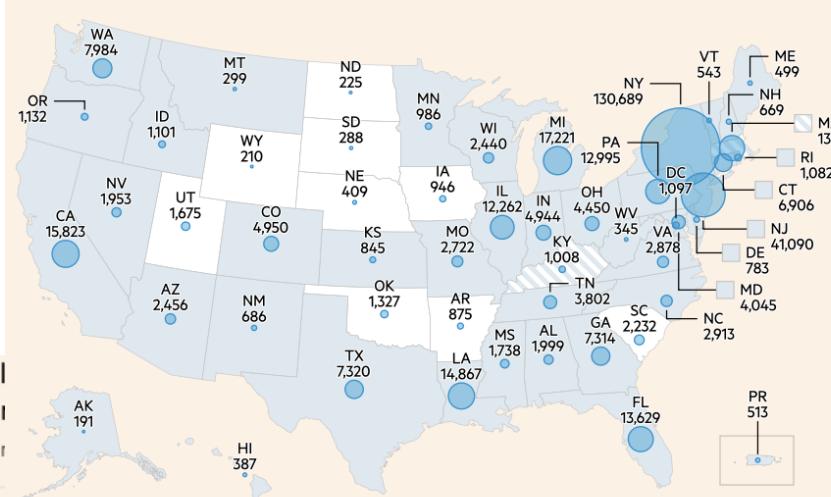
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Financial Times Graphs Blown Up...

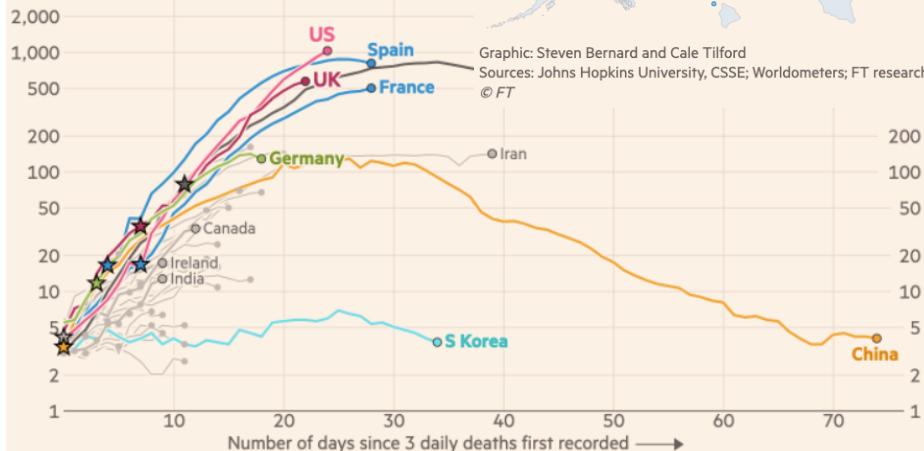
Coronavirus situation in the US
Total cases confirmed as of 11:21pm Apr 6 BST

Statewide 'stay at home' order*
Advisory 'stay at home' order**



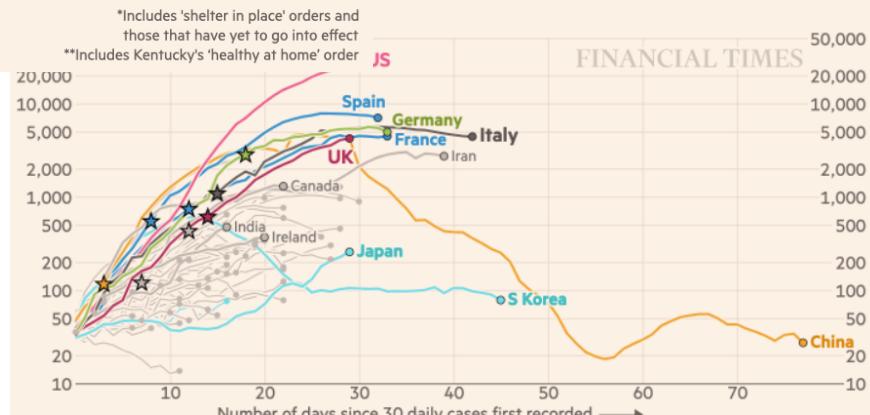
Italy and Spain's daily death tolls are plateauing, while the US and UK are still rising. Every day brings more new deaths than the day before.

Daily coronavirus deaths (7-day rolling avg.), by number of days since 30 daily cases first recorded



numbers of new cases now in decline,

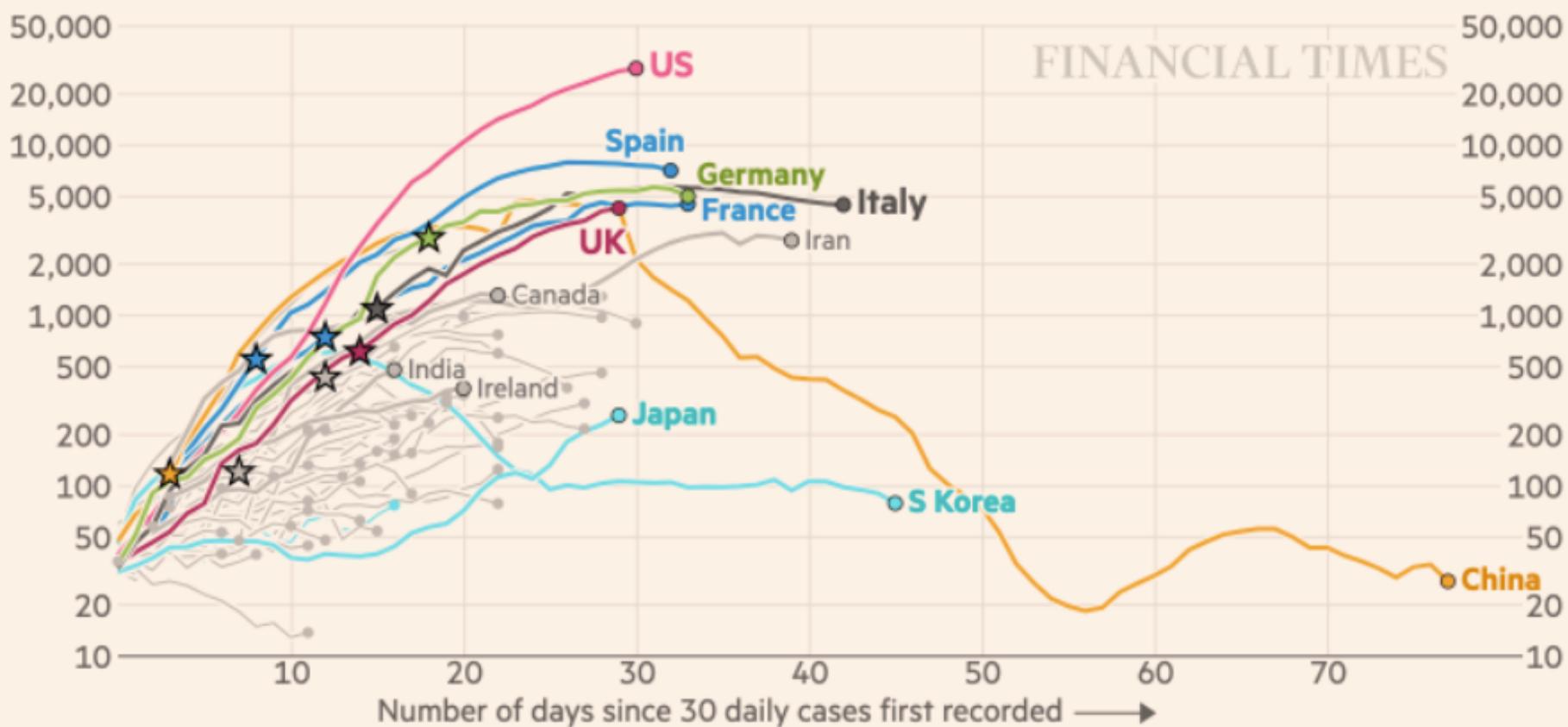
by number of days since 30 daily cases first recorded



Italy has turned the corner, with numbers of new cases now in decline, following in China's footsteps

Daily confirmed cases (7-day rolling avg.), by number of days since 30 daily cases first recorded

Stars represent national lockdowns ★



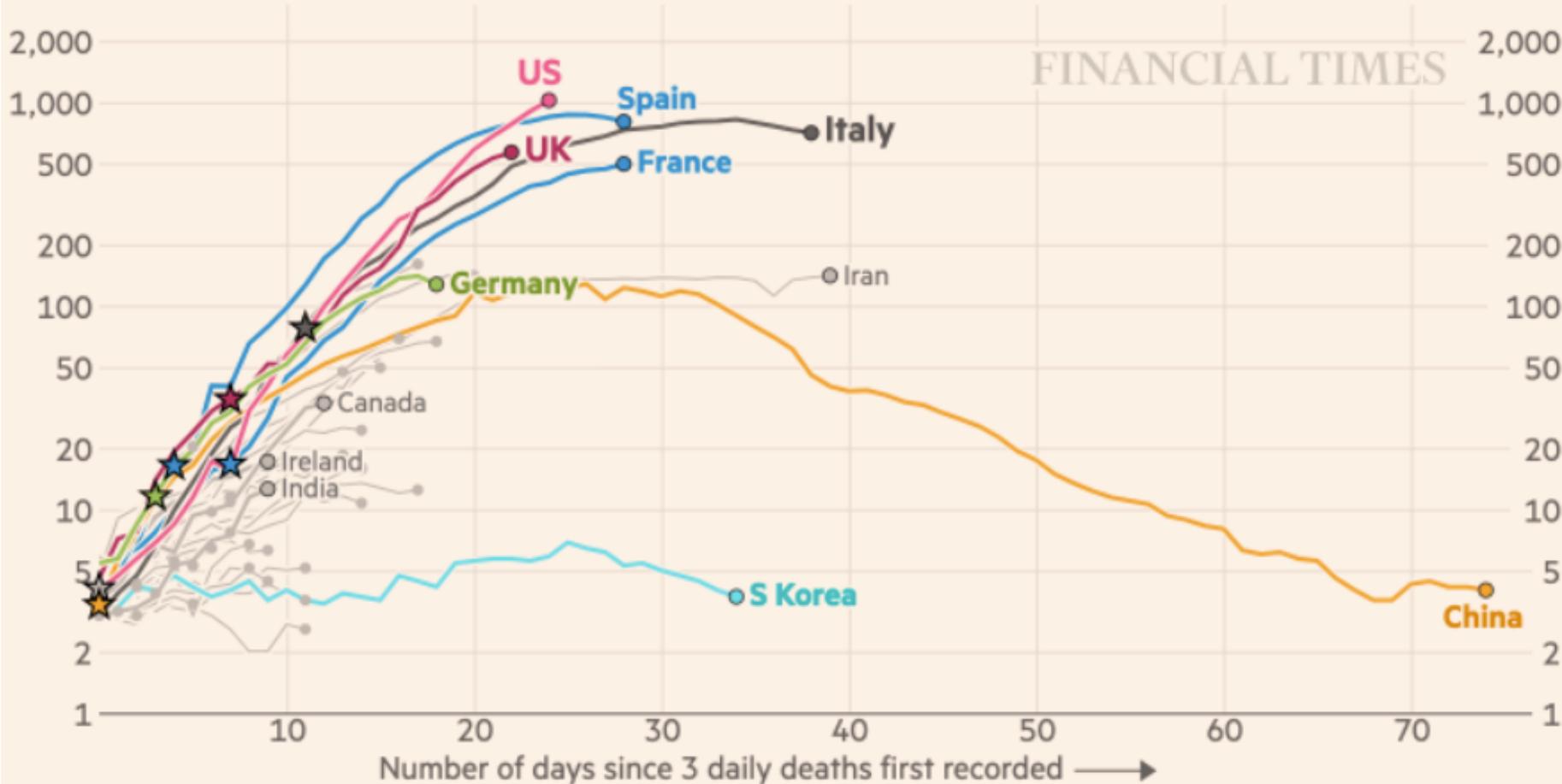
FT graphic: John Burn-Murdoch / @jburnmurdoch

Source: FT analysis of European Centre for Disease Prevention and Control; Worldometers; FT research. Data updated April 06, 19:00 GMT

© FT

Italy and Spain's daily death tolls are plateauing, but in the UK and US every day brings more new deaths than the last

Daily coronavirus deaths (7-day rolling avg.), by number of days since 3 daily deaths first recorded



FT graphic: John Burn-Murdoch / @jburnmurdoch

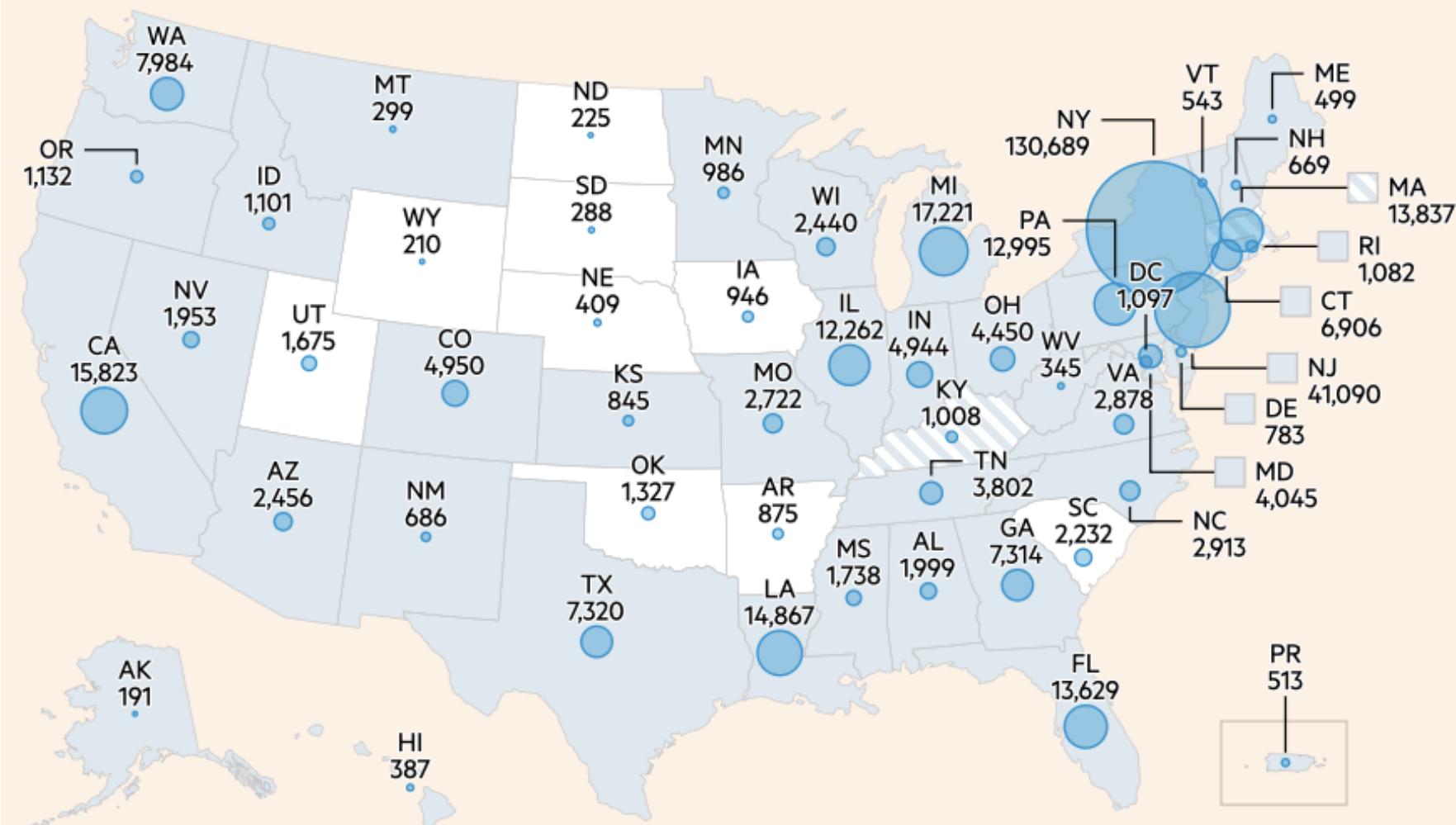
Source: FT analysis of European Centre for Disease Prevention and Control; Worldometers; FT research. Data updated April 06, 19:00 GMT

© FT

Coronavirus situation in the US

Total cases confirmed as of 11:21pm Apr 6 BST

- Statewide 'stay at home' order*
- Advisory 'stay at home' order**



Graphic: Steven Bernard and Cale Tilford

Sources: Johns Hopkins University, CSSE; Worldometers; FT research

© FT

*Includes 'shelter in place' orders and those that have yet to go into effect

**Includes Kentucky's 'healthy at home' order

James Stock (2020)

Standard SIR model: <<https://drive.google.com/file/d/12MV466ZZy5xHir4xdPhoTrL1oO8CbZU-/view>>:

- Susceptible, Infected, Recovered (& immune), transmission rate β , recovery rate γ , reproduction number R_0 , asymptomatic hence non-tested rate π_0
- Calibration: half-life of infection one week: $\gamma = 0.5$, $s_0 = 0.02$, 50 cases on Jan 24
- For March 21, 2020, the positive test rate in the United States is approximately 10%...

$$\Delta S_t = -\beta I_{t-1} \frac{S_{t-1}}{N}$$

$$\Delta R_t = \gamma I_{t-1},$$

$$\Delta I_t = \beta I_{t-1} \frac{S_{t-1}}{N} - \gamma I_{t-1}$$

<<https://drive.google.com/file/d/12MV466ZZy5xHir4xdPhoTrL1oO8CbZU-/view>>

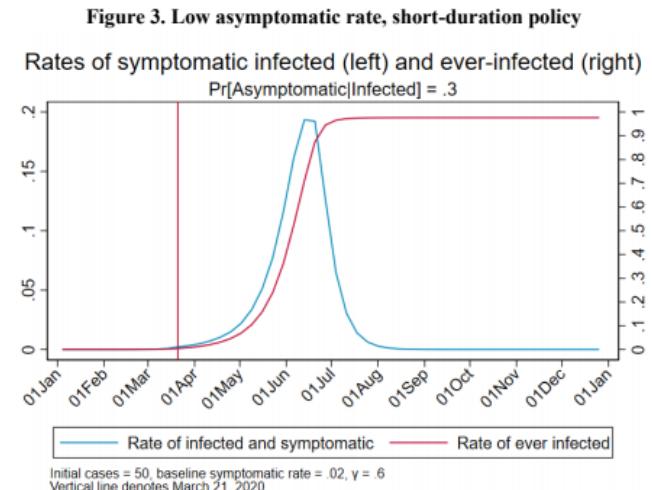


Figure 2. High asymptomatic rate, short-duration policy

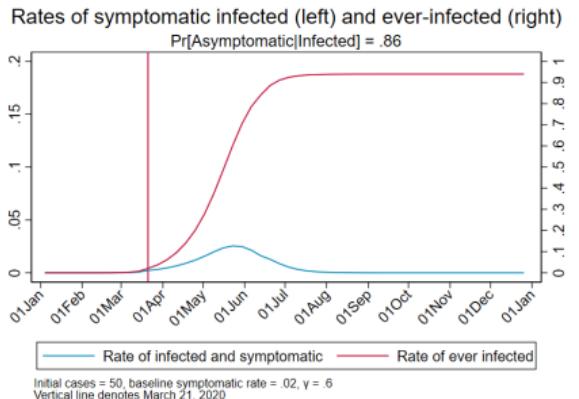


Figure 4. Low asymptomatic rate, severe long-duration policy

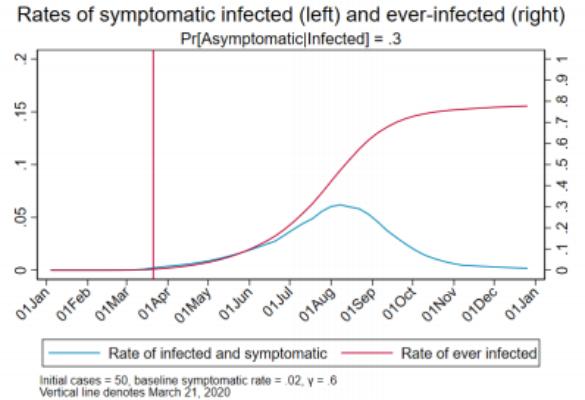
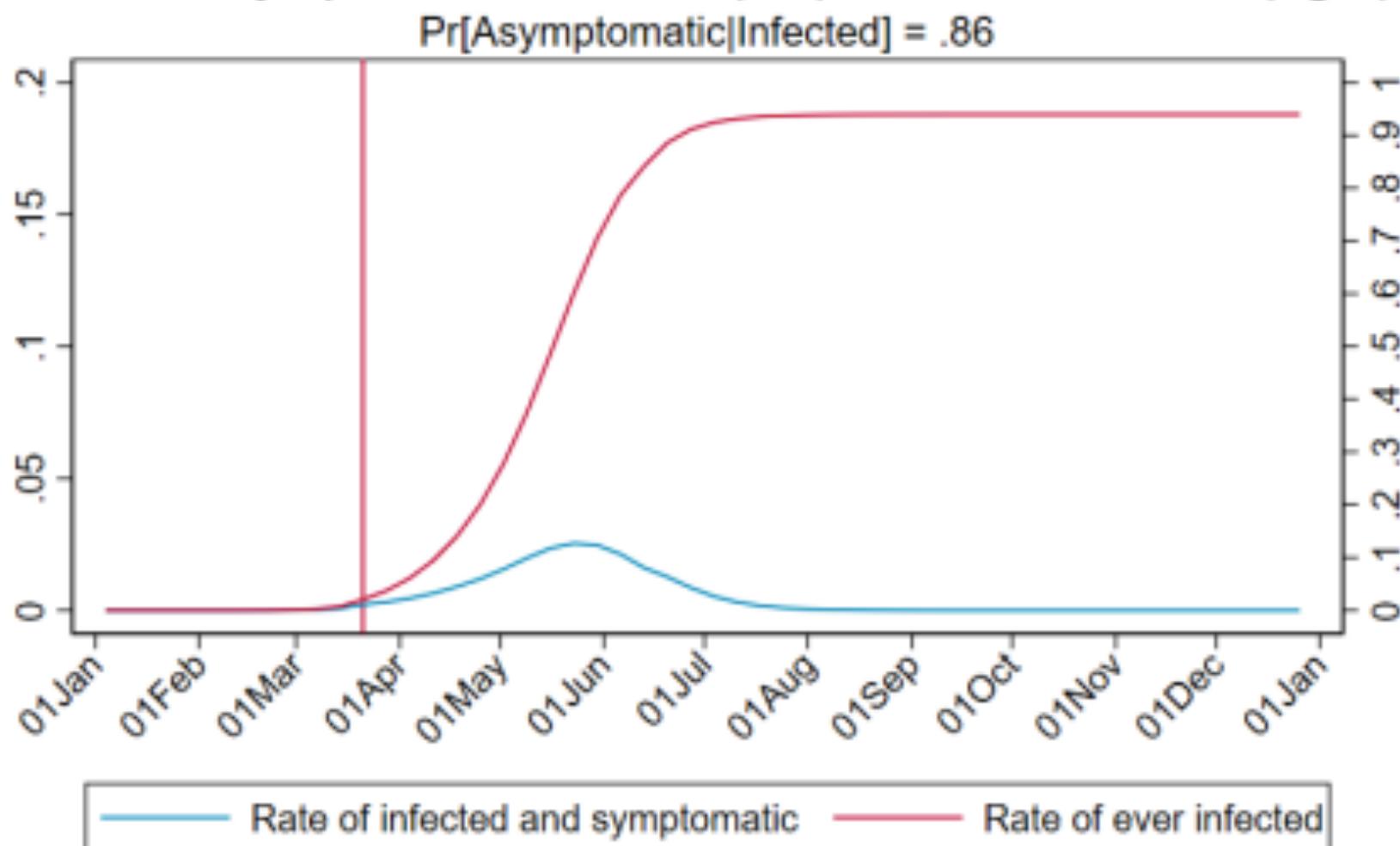


Figure 2. High asymptomatic rate, short-duration policy

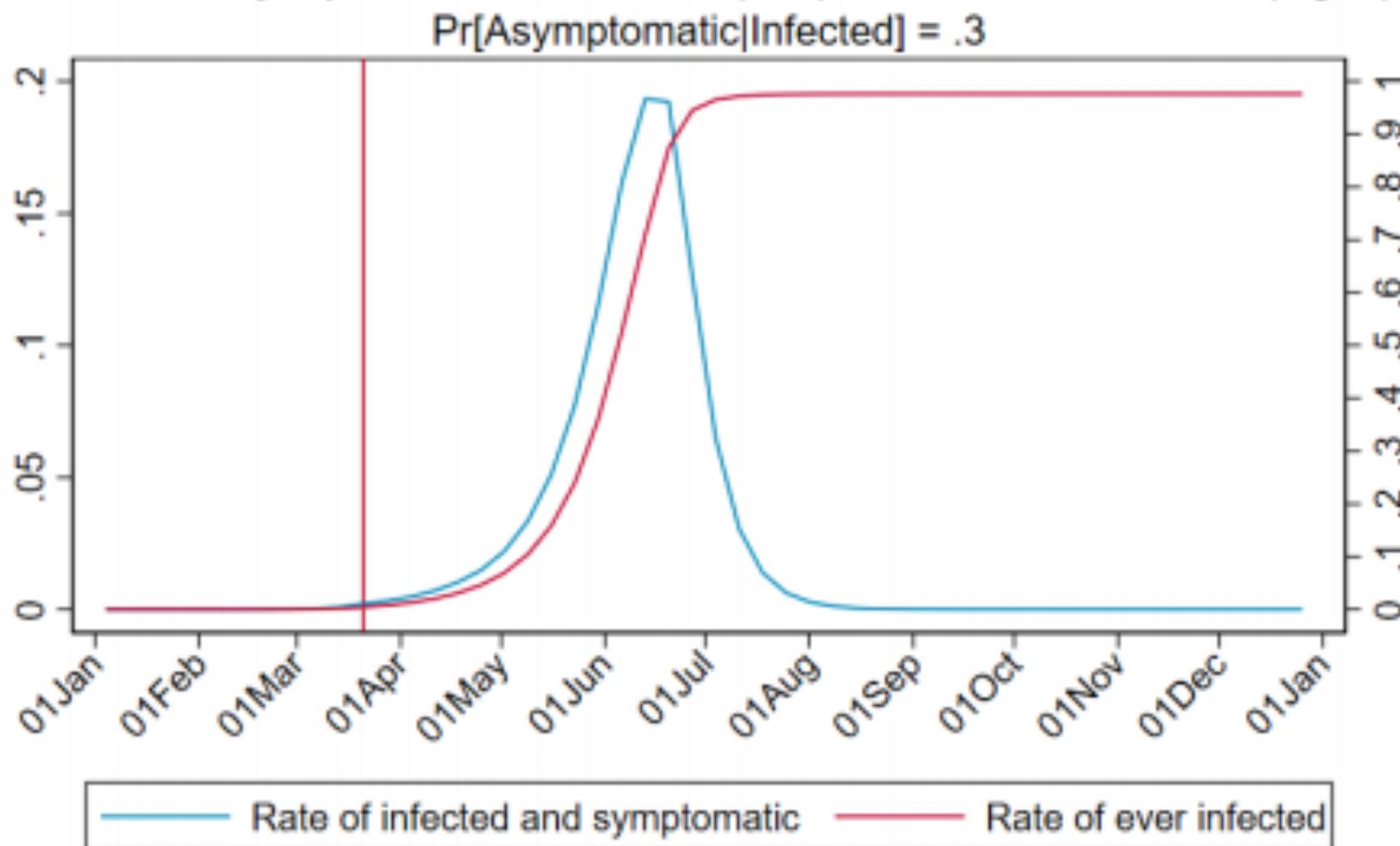
Rates of symptomatic infected (left) and ever-infected (right)



Initial cases = 50, baseline symptomatic rate = .02, $\gamma = .6$
Vertical line denotes March 21, 2020

Figure 3. Low asymptomatic rate, short-duration policy

Rates of symptomatic infected (left) and ever-infected (right)

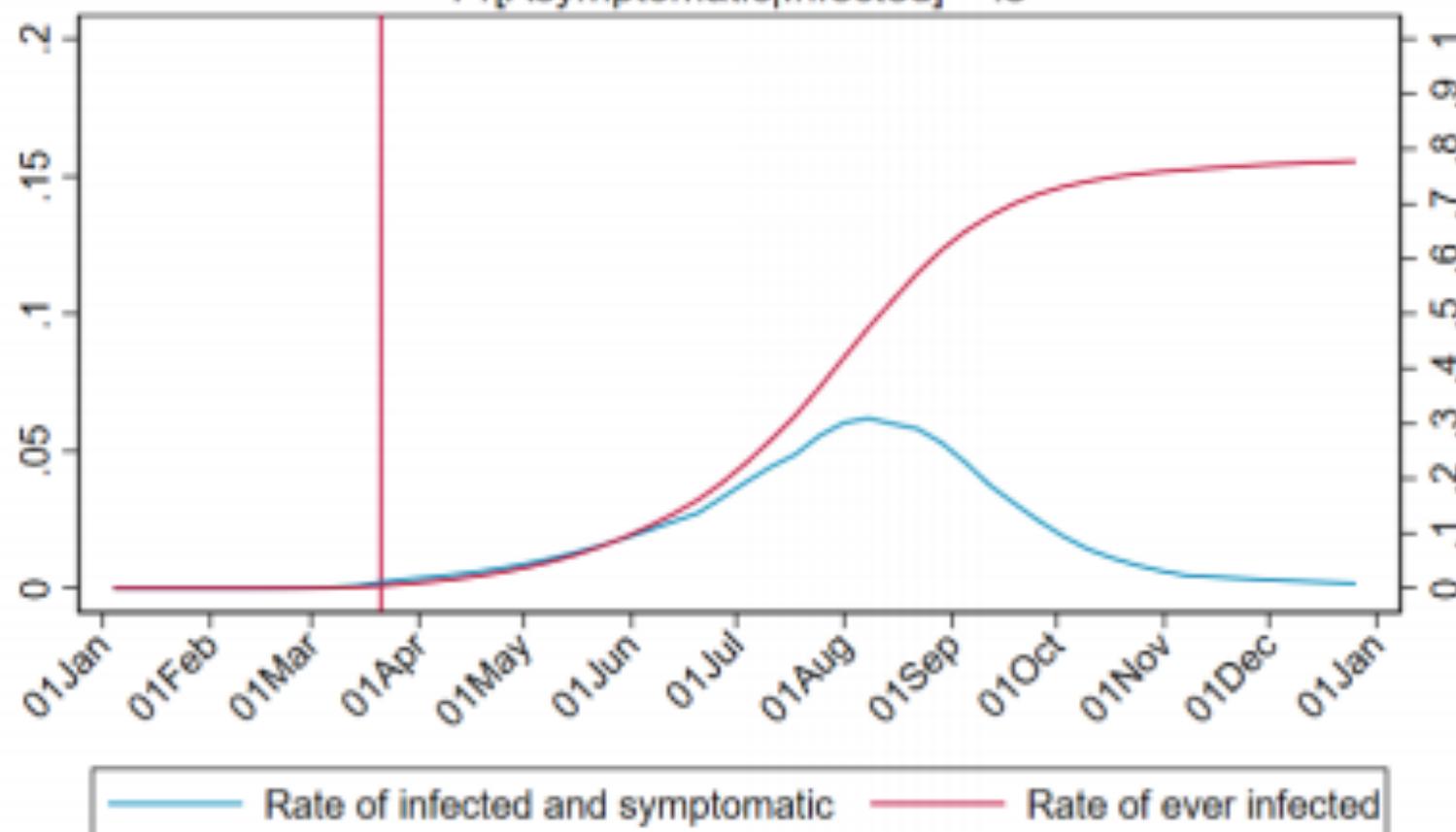


Initial cases = 50, baseline symptomatic rate = .02, $\gamma = .6$
Vertical line denotes March 21, 2020

Figure 4. Low asymptomatic rate, severe long-duration policy

Rates of symptomatic infected (left) and ever-infected (right)

$$\Pr[\text{Asymptomatic} | \text{Infected}] = .3$$



Initial cases = 50, baseline symptomatic rate = .02, $\gamma = .6$
Vertical line denotes March 21, 2020

$$\Delta S_t = -\beta I_{t-1} \frac{S_{t-1}}{N}$$

$$\Delta R_t = \gamma I_{t-1},$$

$$\Delta I_t = \beta I_{t-1} \frac{S_{t-1}}{N} - \gamma I_{t-1}$$

Bringing the Economy Back Up from Anæsthesia

Major issues:

- Certificates of immunity:
 - Which requires test, test, test:
 - And not just disease virus tests
 - Presence-of-antibodies tests
- How quickly can we match the immune with public-contact jobs?
- What jobs can be done with minimal infection risk?
- What minimal-infection substitutes can we find for previous jobs?
- How quickly can restrictions be relaxed without the virus coming roaring back?
- How do we avoid having the market give a “shutdown” signal to enterprises we in fact want restarted?
 - Which is pretty much all of them
- How much of the potential caseload do we want to push out beyond the vaccine-arrival date?

ALL THESE QUESTIONS ARE ANSWERABLE IF WE LEARN THE ASYMPTOMATIC HENCE NON-TESTED RATE!!

Keeping the Economy from Crashing During the Lockdown

Nick Rowe: We have a 50% output cut in 100% of the sectors:

- A temporary 100% output cut in 50% of the sectors (what the Coronavirus does) is very different from a 50% output cut in 100% of the sectors
- Nick's thought experiment:
 - In three months we are going to invent unobtanium:
 - Substantial intertemporal substitutability
 - Plus lower cross-good contemporaneous substitutability
 - Hence high desired savings rate now
 - Flex-price market thus produces a nominal rate at the zero lower bound and a high inflation rate over the next three to six months
 - Plus liquidity-constrained workers in affected sectors see their demand go to zero immediately
 - Can we get there? Should we get there? What should we do instead?
 - We need a good RBC economist: are there any?...

Keeping the Economy from Crashing During the Lockdown II

Nick Rowe:

- <https://worthwhile.typepad.com/worthwhile_canadian_initi/2020/03/relative-supply-shocks-unobtainium-walras-law-and-the-coronavirus.html>
- Plus: to extend the thought experiment:
 - We just lost the ability to make “unobtainium”
 - So we *should* be substituting leisure for work, and moving workers into relatively unproductive labor, making the commodities we can still produce right now
 - How should relative prices move as a result? How should we make them move?

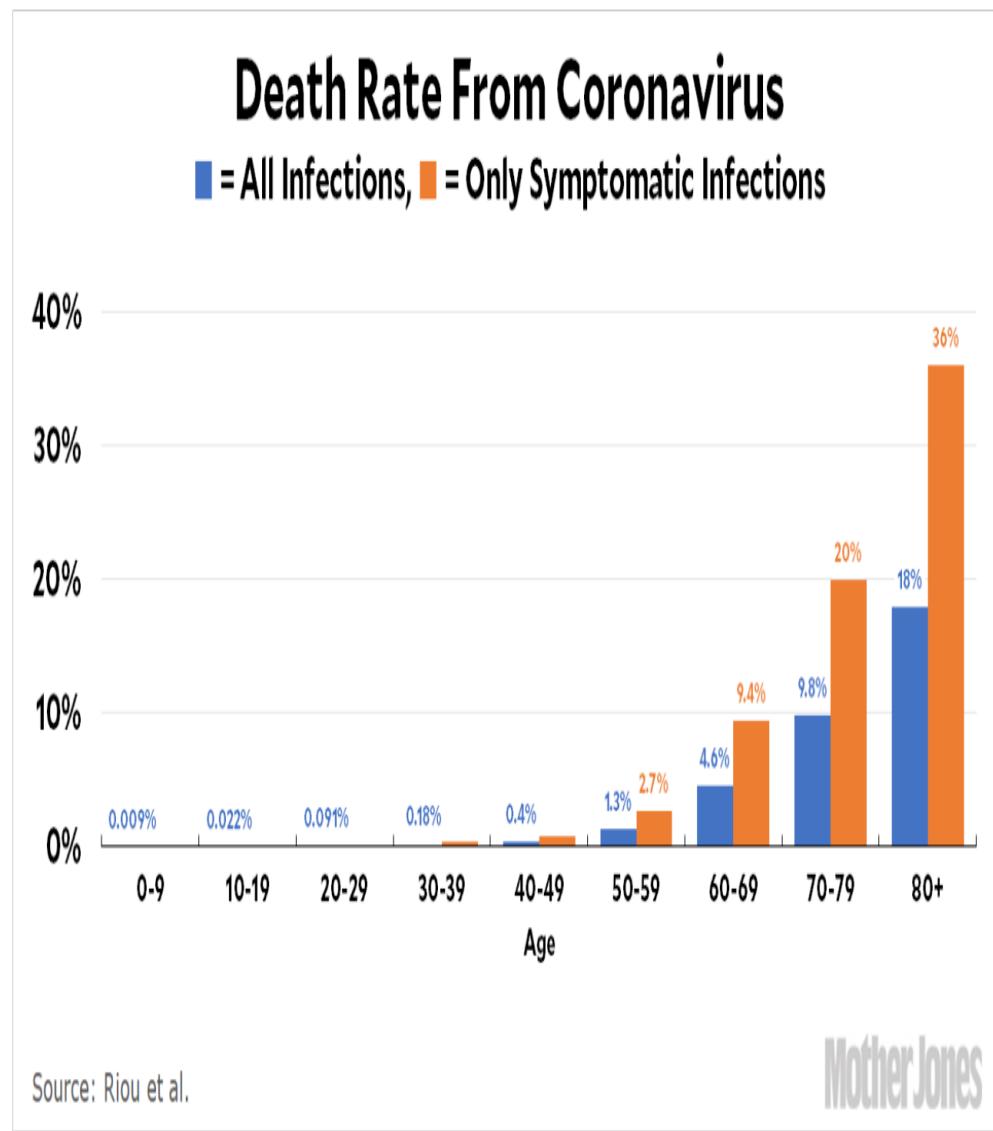
Plus: distributional issues

Plus: bankruptcy and credit chain issues

MOAR Coronavirus!

Death for Geezers!

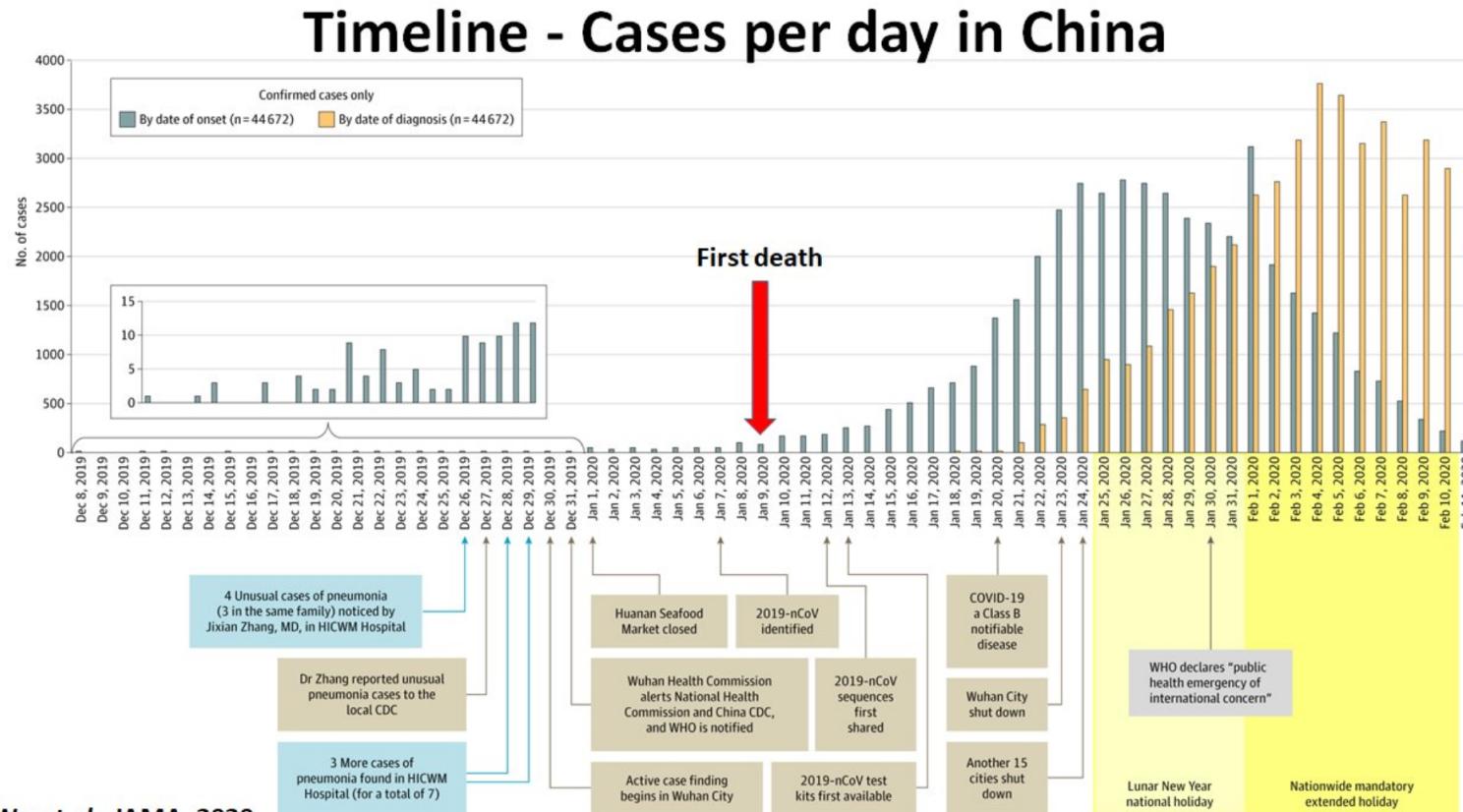
- Mortality for the Youngs very low...
- It's the flu for them—for you...
- And an extra doubling—or is it 5%?—mortality for the asthmatic
- And an extra doubling—or is it 5%?—mortality for the overweight



What We Think Happened in Wuhan

China beat it quickly & relatively easily!

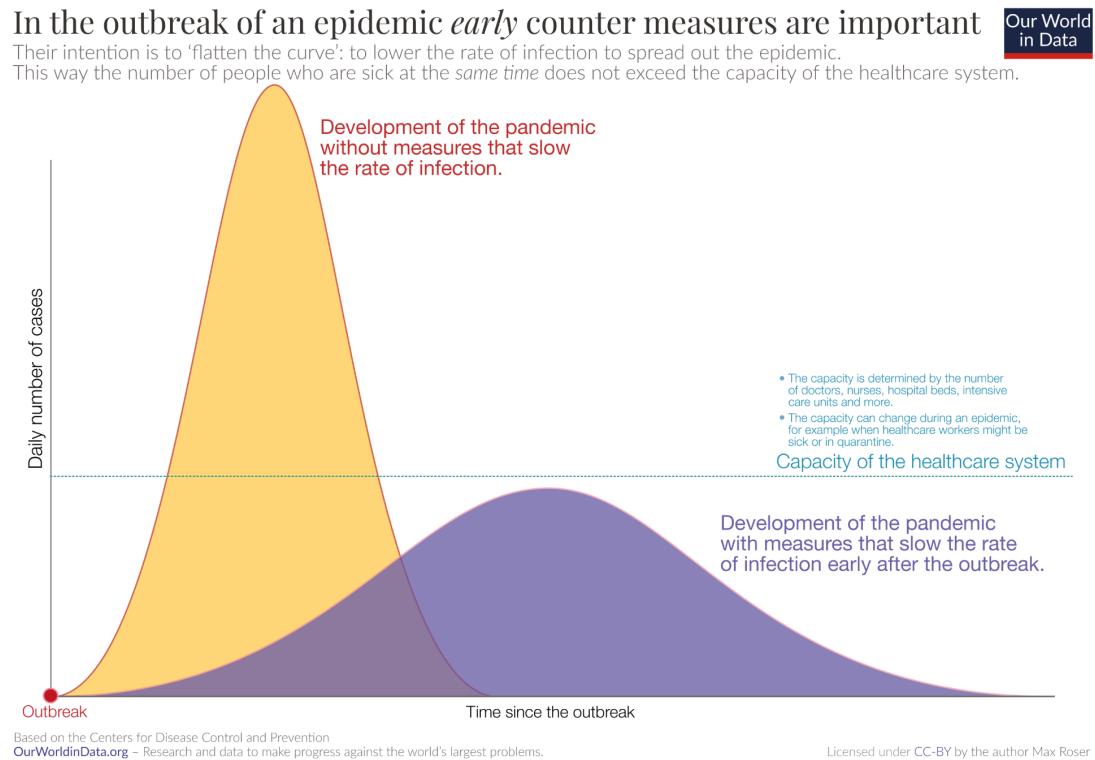
- We think
- Shut down Wuhan when 200 cases per day
- That seems to have been a good decision



The Goal

When Is It Appropriate to Move on This?

- Immediate social distancing...
- Self-isolate if you have a cough and a fever...
- Hope that warmer temperatures will do to this what they did to SARS...
- Otherwise, when do you want to start spreading out transmission. It seems that early is as good as later, so do it early...
 - I have no good intuition on why you want to move early
 - Plus your moving early will be wasted if you get reinfected
 - Plus the sparks you throw off making others' lives more difficult



References

- **Financial Times** (2020): Coronavirus Tracked: The Latest Figures as the Pandemic Spreads <<https://www.ft.com/coronavirus-latest>>
- **Nick Rowe** (2020): *Relative Supply Shocks, Unobtainium, Walras' Law, and the Coronavirus* <https://worthwhile.typepad.com/worthwhile_canadian_initi/2020/03/relative-supply-shocks-unobtainium-walras-law-and-the-coronavirus.html>
- **Jim Stock** (2020): *Coronavirus Data Gaps and the Policy Response* <<https://drive.google.com/file/d/12MV466ZZy5xHir4xdPhoTrL1oO8CbZU-/view>>

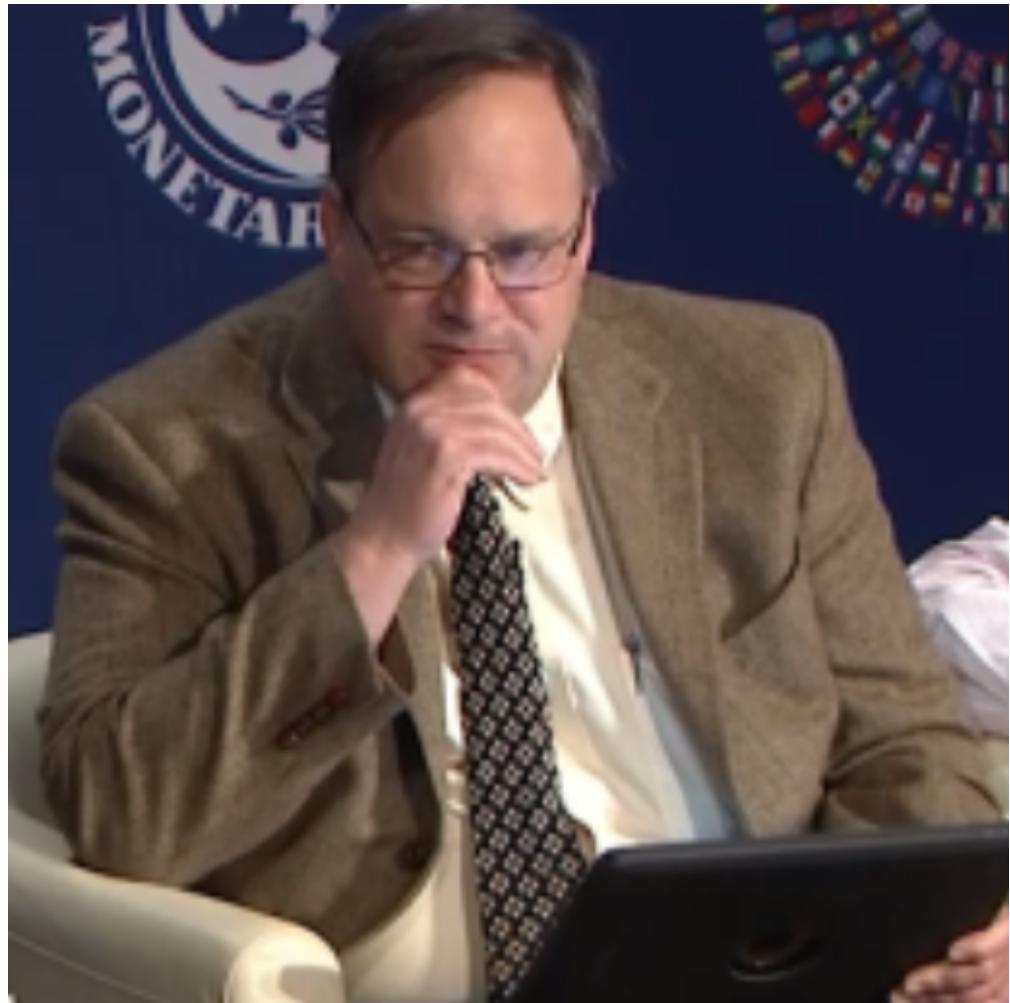
MOAR Coronavirus!

What I am watching:

- **Max Roser & Hannah Ritchie:** *Coronavirus Disease (COVID-19)* <<https://ourworldindata.org/coronavirus>>...
- **Worldometer:** *Coronavirus Update (Live)* <<https://www.worldometers.info/coronavirus/>>: '125,599 Cases and 4,605 Deaths from COVID-19 Virus Outbreak...'
- *FT Coronavirus Tracker* <<https://www.ft.com/content/a26fbf7e-48f8-11ea-aeb3-955839e06441>>
- Josh Marshall's COVID Twitter List <<https://twitter.com/i/lists/1233998285779632128>>
- NEJM Group: Updates on the Covid-19 Pandemic <http://m.n.nejm.org/nl/jsp/m.jsp?c=%40kxNtXckRDOq8oG0jJvAXsIzN4mPECIPhtxoTSdTU9k%3D&cid=DM89089NEJM_COVID-19_Newsletter&bid=173498255>: 'From the New England Journal of Medicine, NEJM Journal Watch, NEJM Catalyst, and other trusted sources...'

Catch Our Breath...

- Ask a couple of questions?
 - Make a couple of comments?
 - Any more readings to recommend?
-
- <<https://www.icloud.com/keynote/0YKEi7HeOrVGvKYtt9FEqH7nA>>
 - <<https://www.bradford-delong.com/2020/04/coronavirus.html>>
 - github:<<https://github.com/braddelong/public-files/blob/master/coronavirus.pptx>>
 - <https://github.com/braddelong/public-files/blob/master/coronavirus.pdf>
 - html File: <<https://www.bradford-delong.com/2020/04/coronavirus.html>>
 - Edit This File: <<https://www.typepad.com/site/blogs/6a00e551f08003883400e551f080068834/post/6a00e551f080038834025d9b3bd66a200c/edit>>
 - <<https://delong.typepad.com/files/2020-04-01-coronavirus.pdf>>



Coronavirus! (March 16)

With 31 deaths in the U.S. as of March 11, a 1% death rate, and up to 4 weeks between infection and death, that means that as of Feb 12 there were 3100 coronavirus cases in the United States.

With 87 deaths in the U.S. as of Mar 16, a 1% death rate, and up to 4 weeks between infection and death, that means that as of Feb 17 there were 8700 coronavirus cases in the United States

If it is doubling every seven days, then now about 150,000 people have and in the next week about 150,000 more people in the U.S. will catch coronavirus—which means 1/2200, currently 3500 of the 7.6 million inhabitants of San Francisco Bay. Touch a hard surface that any of those 3500 has touched in the last 48 hours, and the virus has a chance to jump to you...

These numbers could be five times too big. These numbers are probably not five times too small unless the thing is a lot less deadly, and there are a lot of asymptomatic cases...

- What is wrong with this analysis?

MOAR Coronavirus!

As of March 21: Things are not moving in the right direction:

- What is the R_0 ?
- How can the R_0 be changed?
- How will the R_0 change?
- What is the asymptote share of the population?
- What is the mortality rate?

Country, Other	Total Cases	New Cases	Total Deaths	New Deaths	Total Recovered	Active Cases	Serious, Critical	Tot Cases/1M pop
China	80,880	+36	3,213	+14	67,819	9,848	3,226	56.2
Italy	27,980	+3,233	2,158	+349	2,749	23,073	1,851	462.8
Iran	14,991	+1,053	853	+129	4,590	9,548		178.5
Spain	9,428	+1,440	335	+41	530	8,563	272	201.6
S. Korea	8,236	+74	75		1,137	7,024	59	160.6
Germany	7,241	+1,428	15	+2	65	7,161	2	86.4
France	5,423		127		12	5,284	400	83.1
USA	4,186	+506	73	+5	73	4,040	12	12.6
Switzerland	2,353	+136	19	+5	4	2,330		271.9
UK	1,543	+152	55	+20	52	1,436	20	22.7
Netherlands	1,413	+278	24	+4	2	1,387	45	82.5
Norway	1,323	+67	3		1	1,319	27	244.0

Coronavirus Cases:

179,836

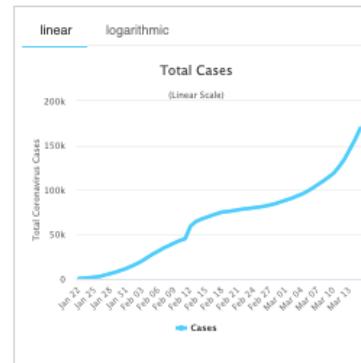
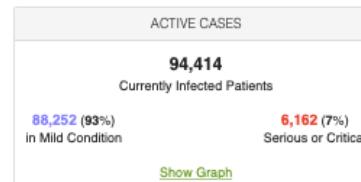
[view by country](#)

Deaths:

7,098

Recovered:

78,324



MOAR Coronavirus!

As of March 10: Things are not moving in the right direction:

- What is the R_0 ?
- How can the R_0 be changed?
- How will the R_0 change?
- What is the asymptote share of the population?
- What is the mortality rate?

Coronavirus Cases:

125,599

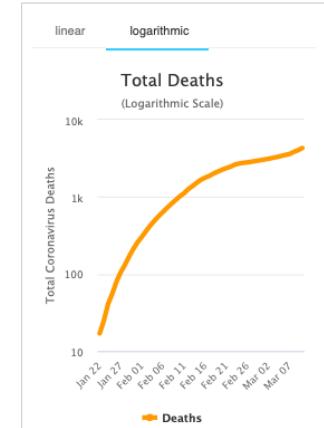
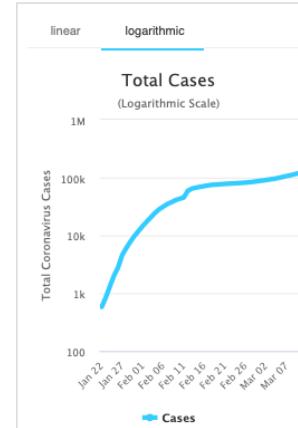
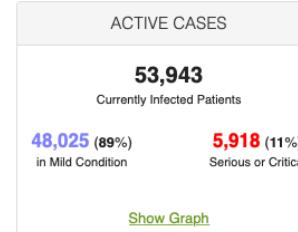
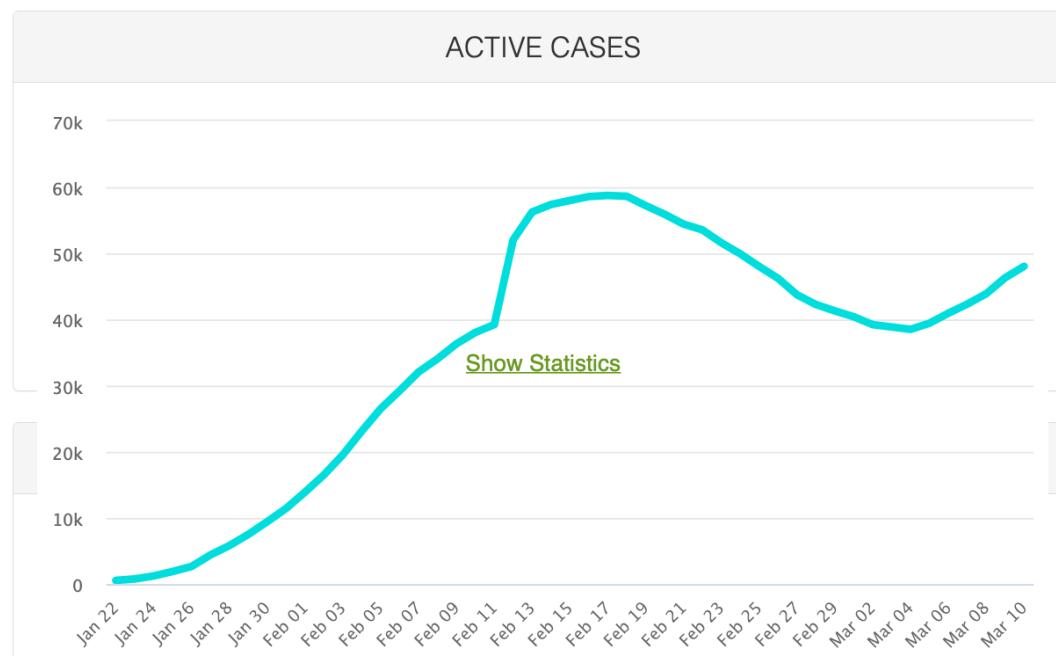
[view by country](#)

Deaths:

4,605

Recovered:

67,051



Notes

