

Lecture 17:

4.6. The Development of Underdevelopment

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

[<https://github.com/braddelong/public-files/blob/master/econ-135-lecture-17.pptx>](https://github.com/braddelong/public-files/blob/master/econ-135-lecture-17.pptx)

[<https://www.icloud.com/keynote/0lWeNgJnwEjyoHm3Gf81hWJXw>](https://www.icloud.com/keynote/0lWeNgJnwEjyoHm3Gf81hWJXw)

Big Ideas: Lecture 16: Inequality and Plutocracy

Takeaways from last lecture:

1. Give me five...

Discussion

The Development of Underdevelopment:

- What strikes you as important here?

The Watershed: 1870 as the Inflection Point

As of 1870, had the Industrial Revolution raised the standard of living or lightened the toil of the working class in England, the country at its center?

- No.
- Why not? Malthusian forces—population explosion & thus smaller farm sizes.
- Pace of technological and organizational change not fast enough to raise incomes high enough to force the demographic transition.
- Hence importance of 1870: our h goes from 0.44%/yr to 2.06%/year, globally, and sticks there since
 - (Until now?)
- Principal cause of the speed-up? The modern corporation and its industrial research labs that made routine the process of developing and then implementing new productive ideas.
 - (Was this baked in the cake by the Industrial Revolution? Or could this have been bobbled?)
- Assisting: globalization:
 - Globalization of goods through trade using railroads and iron-hulled steamships
 - Globalization of people through migration using railroads and iron-hulled steamships
 - Globalization of communications using the telegraph
- Yet: DIVERGENCE, BIGTIME

The Economic El Dorado of 1870-1914

Or so John Maynard Keynes called it in his *The Economic Consequences of the Peace*, looking back from 1919:

- In heavy industries the global north in 1914 was remarkably modern
 - In 1913 Britain burned 194 million tons of coal. Total coal-equivalent energy consumption of Britain today less than 3x 1913
 - Average U.S. passenger RR mileage in 1913: 350/person. Average U.S. airline miles today: 3000/person
- In other ways, even the global north poor and premodern:
 - Agriculture largely unmechanized
 - More than half of Americans still working on the farm
 - Only Britain and Belgium with less than half of the labor force in agriculture
 - Nitrogen artificial fertilizers just coming on line
 - People still worked like dogs in the South Pacific to mine the products of avian defecation off of islands offshore of Chile—and then ship the guano back to Europe as fertilizer
 - Social and political dominance of landlord-aristocrats.

Migration 1870-1914

100 million people left their continents of origin between 1870-1913—70 million of them permanently:

- 9 days from Liverpool to New York: it had taken a month in 1800
- 1.5 month's wages for an unskilled European worker—to double your pay, and your children's pay
- 50 million from Europe, 50 million from Asia
- Migration and global inequality
 - The development of underdevelopment in the global south can be understood only as a consequence of these waves of migration
- Migration and exceptional America
 - Only America's welcoming of migration gave it the demographic heft to be the world's 20th century superpower

Year	British Empire: European- descended population	United States ("full citizen")	Germany
1800	17	4	15
1840	28	13	27
1870	37	33	41
1913	59	83	67
1939	75	113	80
2016	138	288	82

Migration from Asia

The “development of underdevelopment” in the global south:

- 50 million left from China and India:
 - Peru had a President surnamed Fujimori.
 - The author V.S. Naipaul was born in the Caribbean.
 - The redwood forests of California contain shrines to the bodddhisatva Guan-Yin.
- A uniquely rapid redistribution of humanity around the globe.
- However, migration from China to California and other temperate-climate destinations stopped:
 - Plutocrats like Leland Stanford favored immigration
 - Populists campaigned on: “Chinaman go home”
 - Populists won in this narrow respect: limiting Asian immigrants

Migration from Asia Channeled to the Tropics

To the tea plantations of Ceylon, the rubber plantations of Malaysia, & c.:

- This mattered
- Migration out did not raise wages much in the migration-source economies of China and India
 - They were so large in population
 - Emigration was but a drop in the bucket
- Did migration lower relative wages in tropical-zone recipient economies? Yes.
 - Plus it lowered relative wages in tropical-zone economies that never saw a migrant.
 - British capital, Brazilian-stock rubber plants, and labor imported from China went to Malaya
 - There it could and did put heavy downward pressure on the wages in Brazil of rubber tappers who did not know there was such a place as Malaya

The Role of the British Empire

The British Empire made migration easy and plantation trade very profitable:

- The comparative advantages of the regions that were to become the “periphery”
 - They were not so much given as made.
- Where the British went they built:
 - a fort,
 - some docks, and
 - a botanical garden
- The botanical garden to discover what valuable plants grown elsewhere might flourish here as well
 - The rubber plant to Malaysia
 - The tea shrub came to Ceylon
 - Plus the coffee bush came to Brazil

The Down-Phase of the Malthusian Cycle in Asia and Its Consequences

China and India were at their poorest ever in 1870:

- They had not escaped the Malthusian regime
- Technology had advanced:
 - The population of China in 1870 three times 1000
 - Living standards somewhat lower
- Migrants from China and India willing to move for what seemed to Europeans and others starvation wages
- Checked the growth of wages in any of the areas—Malaysia, Indonesia, the Caribbean, or east Africa—open to the Asian migration stream
- Thus commodities produced in countries open to Asian immigration were cheap
- Competition from the Malaysian rubber plantations pushed down Brazil as well.
- Thus living standards and wage rates became and remain relatively low throughout the global south
 - Hence no prosperous middle class
 - Hence no domestic demand in manufactures
 - Hence no chance of starting industrialization, building a community of engineering practice, and then taking the next step and so getting on to the escalator to modernity and prosperity

Big Ideas: Lecture 17: the Development of Underdevelopment

Takeaways from this class:

How We Will Run This Course Going Forward...

17. Tu Mar 31: 4.6. The Development of Underdevelopment

- **Read Before:** W. Arthur Lewis (1978): Evolution of the International Economic Order <<https://github.com/braddelong/public-files/blob/master/lewis-evolution-a.pdf>> <<https://github.com/braddelong/public-files/blob/master/lewis-evolution-b.pdf>>
- **Slides:** <<https://github.com/braddelong/public-files/blob/master/econ-135-lecture-17.pptx>>

18. Th Apr 2: Touring the Continents: 5.1. Western Europe, North America, and South America

- **Read Before:** Joel Mokyr (1990): *Lever of Riches*, chapter 10 Britain and Europe <<https://delong.typepad.com/files/mokyr-lever-europe.pdf>>
- **Read Before:** John Coatsworth (2008): Inequality, Institutions and Economic Growth in Latin America <<https://delong.typepad.com/files/coatsworth-institutions.pdf>>
- **Slides:** <<https://github.com/braddelong/public-files/blob/master/econ-135-lecture-18.pptx>>

19. Tu Apr 7: 5.2. Behind the Iron Curtain, and 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>>
- **Read Before:** Richard Ericson (1991): The Classical Soviet-Type Economy: Nature of the System and Implications for Reform <<https://delong.typepad.com/files/ericson-soviet.pdf>>
- **Slides:** <<https://github.com/braddelong/public-files/blob/master/econ-135-lecture-19.pptx>>

20. Th Apr 9: 5.3. 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 After:** Sevket 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-20.pptx>>

Roadmap for the Next Two Weeks...

17. Tu Mar 31: 4.6. The Development of Underdevelopment

- **Read After:** W. Arthur Lewis (1978): Evolution of the International Economic Order <<https://delong.typepad.com/sdj/2008/04/w-arthur-lewis.html>>
- **Slides:** <<https://github.com/braddelong/public-files/blob/master/econ-135-lecture-17.pptx>>

18. Th Apr 2: Touring the Continents: 5.1. Western Europe, North America, and South America

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

Roadmap Following: 6. Policy Issues...

6. Policy Issues

T Apr 14: 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>>

Th Apr 16: 6.2. Growth and Fluctuations; Trade and Development, Foreign Aid

- **Read After:** 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 After:** David Atkin (2014): Endogenous Skill Acquisition and Export Manufacturing in Mexico <<https://delong.typepad.com/files/atkin-skill.pdf>>

T Apr 21: 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/eichengreen-populist.pdf>>

Th Apr 23: 6.4. Global Warming

- **Read After:** 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 After:** Melissa Dell *et al.* (2014). What Do We Learn from the Weather? The New Climate-Economy Literature, selections <<https://economics.mit.edu/files/9138>>

T Apr 28: 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>>

Roadmap Following: 7. Conclusion...

7. Conclusion

Th Apr 30: 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

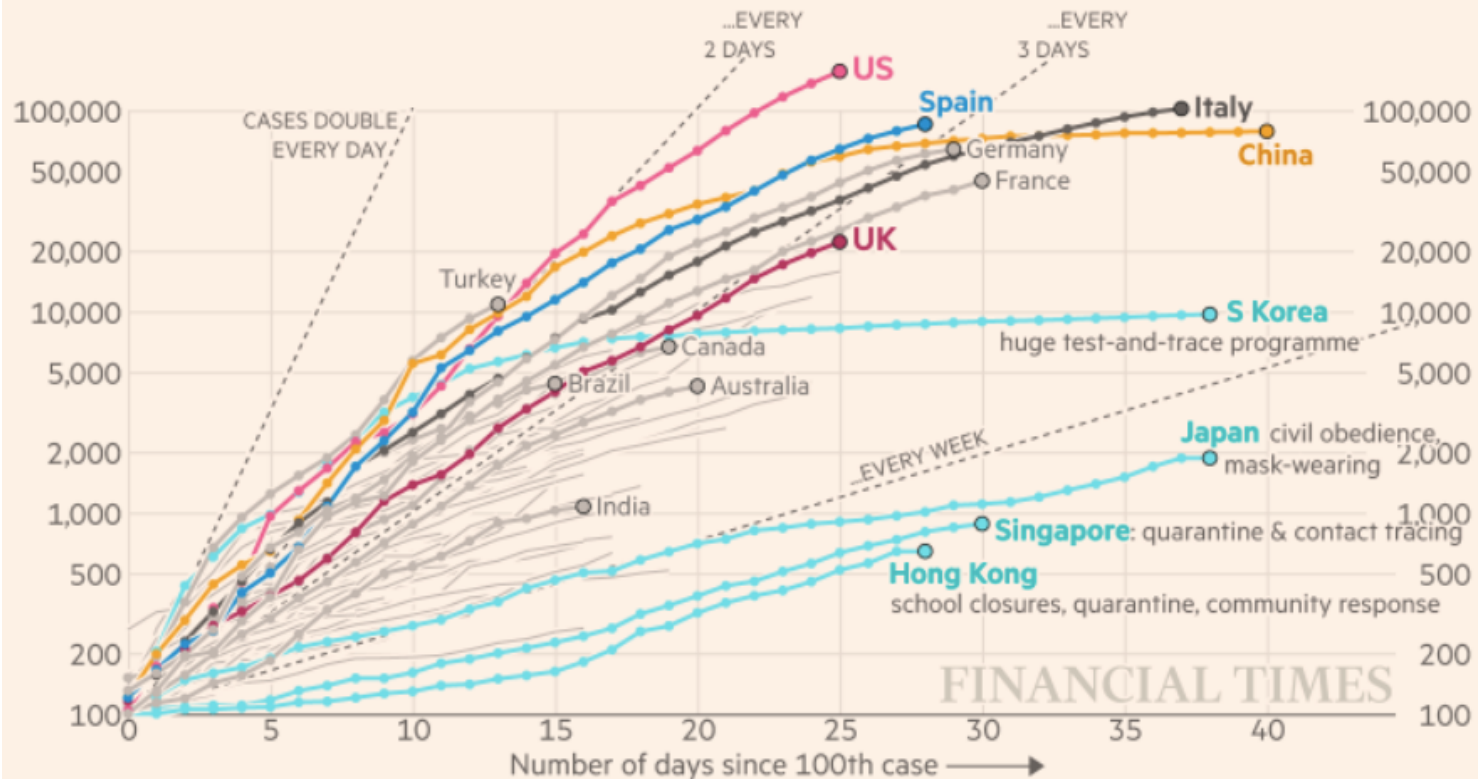
Watch

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!

Country by country: how coronavirus case trajectories compare

Cumulative number of confirmed cases,
by number of days since 100th case



FT graphic: John Burn-Murdoch / @jburnmurdoch

Source: FT analysis of Johns Hopkins University, CSSE; Worldometers; FT research. Data updated March 30, 19:00 GMT

© FT

Coronavirus!

Coronavirus!

There were 2027 reported deaths in the U.S. from the novel coronavirus as of late on Mar 28—if our reporting systems have not yet broken down.

With a 1% death rate, and with 3 weeks between infection and death, that means that as of Mar 7 there were 202700 coronavirus cases in the United States.

Up through Mar 28 deaths have been doubling every three days, suggesting that before Mar 7 true cases were also doubling every three days:

1. If that that pace has continued since, by Mar 31 we will have had 8 further doublings: 52 million cases, 1/6 of the population.
2. If the curve bent to doubling every four days, by Mar 31 we will have had 6 further doublings: 13 million cases, 1/25 of the population, with an additional 30 million cases expected by April 7
3. If the curve bent to doubling every six days, by Mar 31 we will have had 4 further doublings: 3.2 million cases, 1/100 of the population, with an additional 3.8 million cases expected by April 7
4. If the curve bent to doubling every eight days, by Mar 31 we will have had 3 further doublings: 1.6 million cases, 1/200 of the population, with an additional 1.5 million cases expected by April 7
5. If the curve bent to doubling every twelve days, by Mar 31 we will have had 2 further doublings: 800,000 cases, 1/400 of the population, with an additional 600,000 cases expected by April 7
6. If the curve bent to doubling every twenty-four days, by Mar 31 we will have had 1 further doubling: 400,000 cases, 1/800 of the population, with an additional 200,000 cases expected by April 7

As of the morning of Mar 29, the U.S. had 125,000 cases

As of the evening of Mar 28, the U.S. had tested 650,000 people, with a 19% positive rate. Applying that to our six scenarios, in each scenario those we have tested are, respectively, 1, 5, 10, 20, 40, and 80 times more likely to have the disease than the average probability of having the disease.

- **Question:** What is wrong with this analysis?

MOAR Coronavirus!

As of March 16: 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:

179,836

[view by country](#)

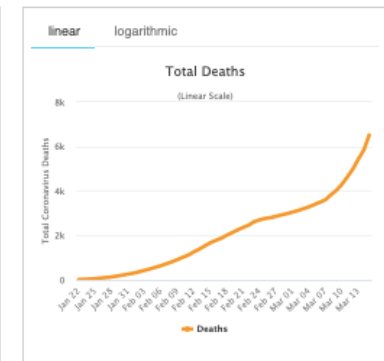
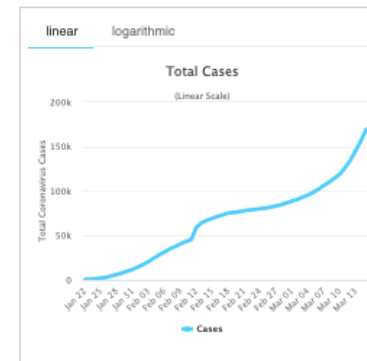
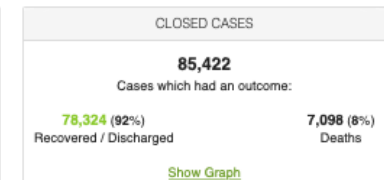
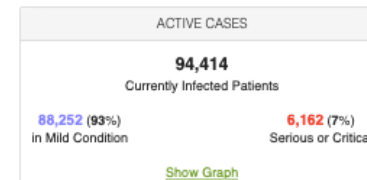
Deaths:

7,098

Recovered:

78,324

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



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](#)

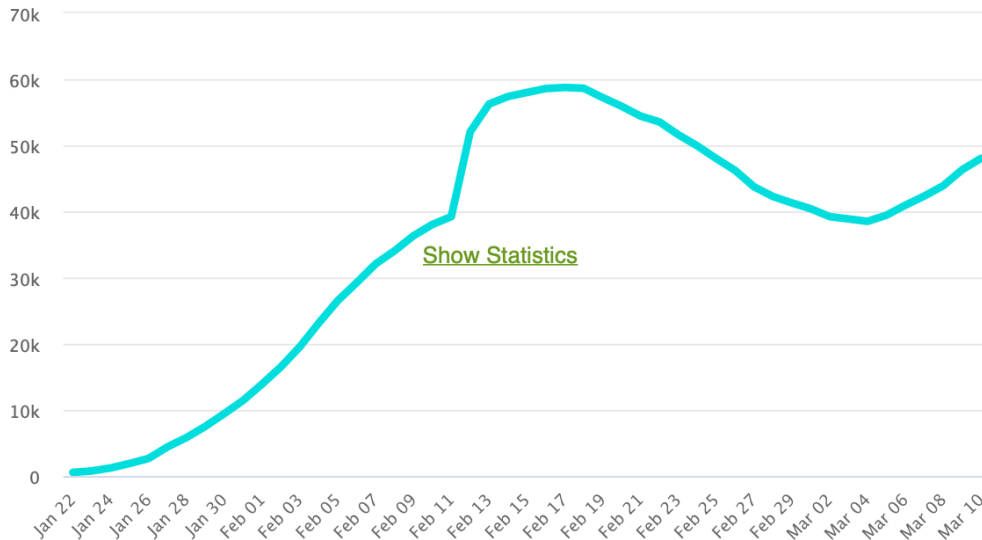
Deaths:

4,605

Recovered:

67,051

ACTIVE CASES



ACTIVE CASES

53,943

Currently Infected Patients

48,025 (89%)
in Mild Condition

5,918 (11%)
Serious or Critical

[Show Graph](#)

CLOSED CASES

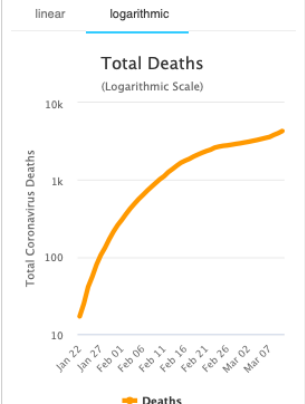
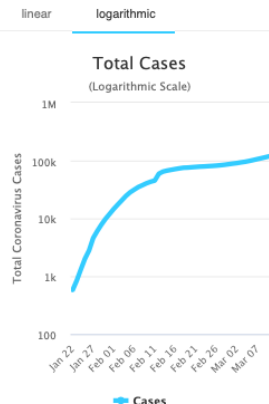
71,656

Cases which had an outcome:

67,051 (94%)
Recovered / Discharged

4,605 (6%)
Deaths

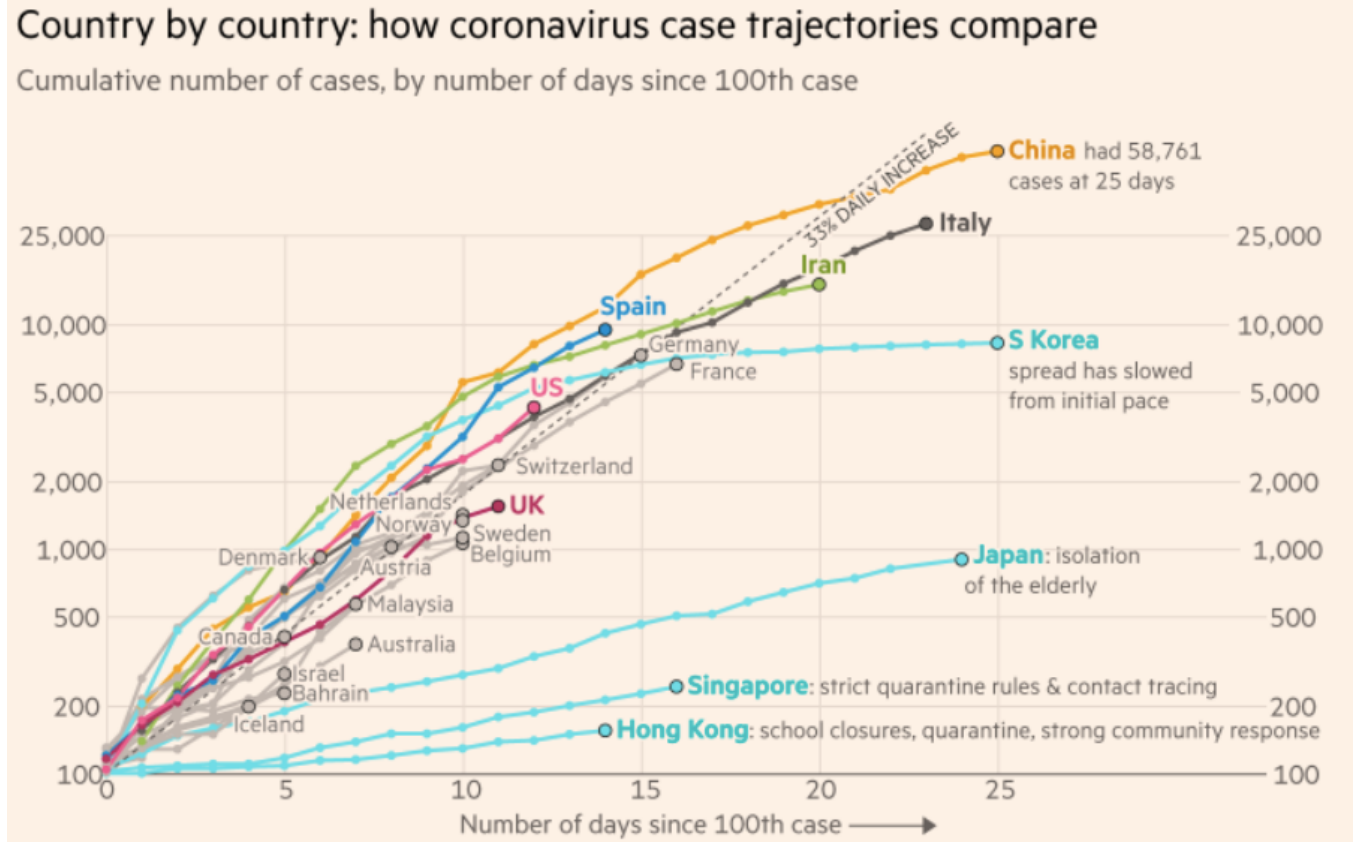
[Show Graph](#)



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>>
- <<https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html>>



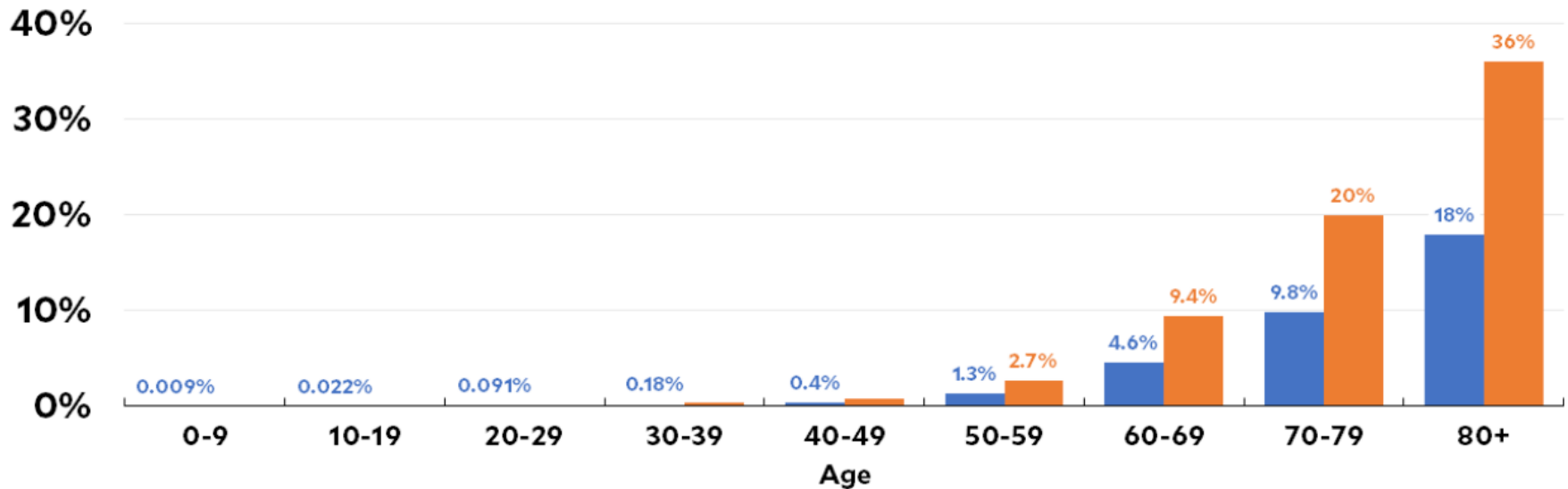
MOAR Coronavirus!

It's a Thing for Geezers!

- Mortality for the Youngs very low...
- It's the flu for them...

Death Rate From Coronavirus

■ = All Infections, ■ = Only Symptomatic Infections



Source: Riou et al.

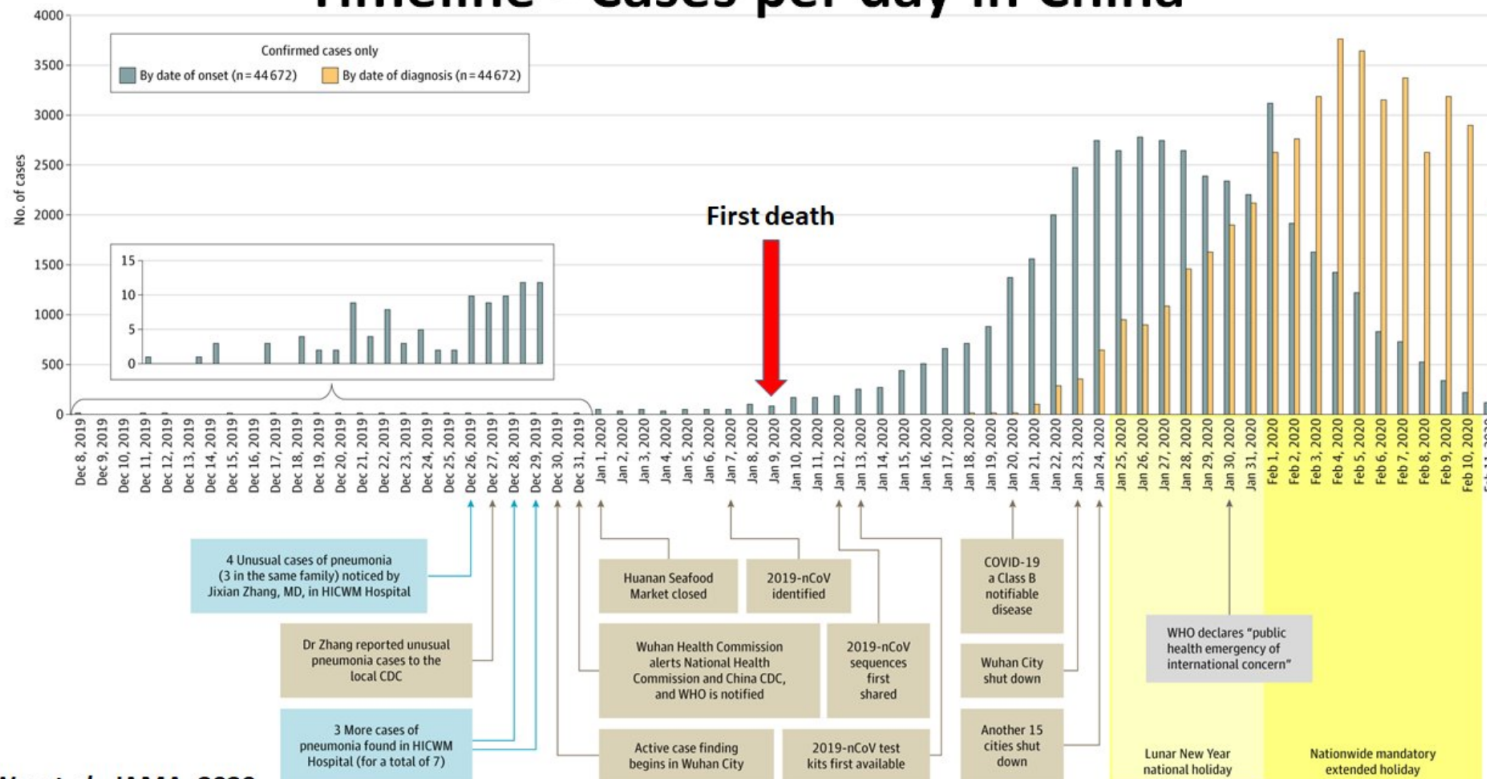
Mother Jones

MOAR Coronavirus! II

China Beat It!

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

Timeline - Cases per day in China



MOAR Coronavirus! III

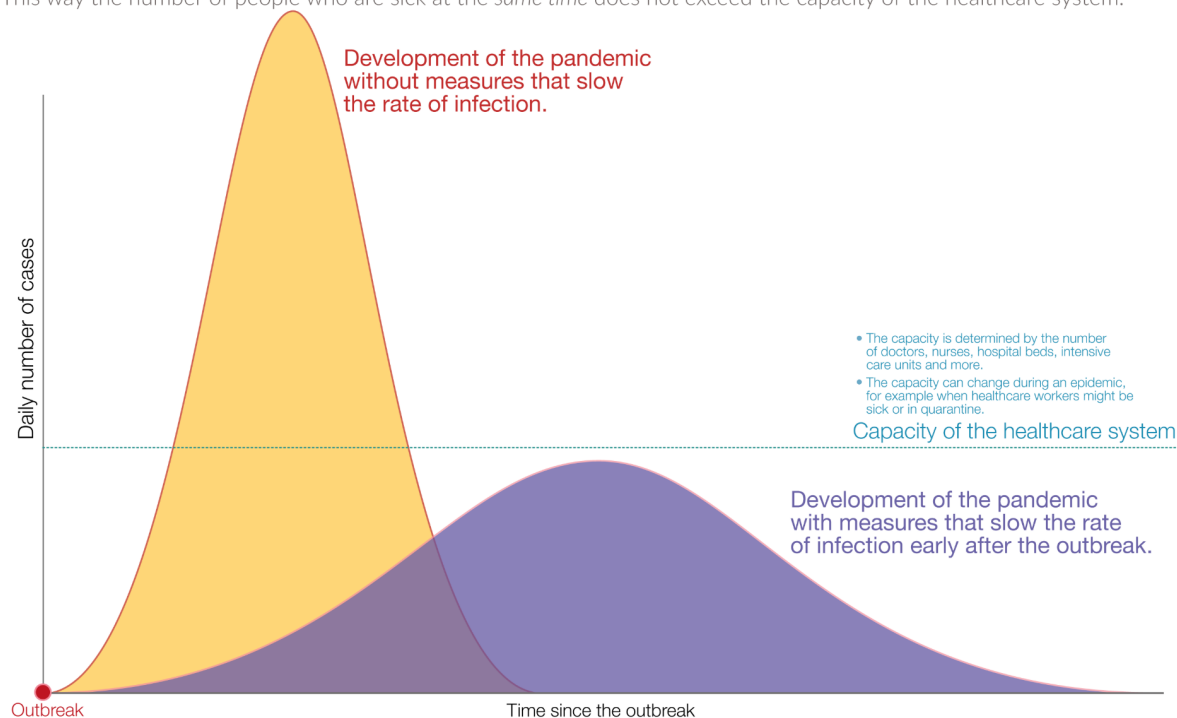
When Is It Appropriate to Move on This?

- 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...

In the outbreak of an epidemic *early* counter measures are important

Our World
in Data

Their intention is to 'flatten the curve': to lower the rate of infection to spread out the epidemic.
This way the number of people who are sick at the *same time* does not exceed the capacity of the healthcare system.



Coronavirus!

~~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 73 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 7300 coronavirus cases in the United States~~

~~If it is doubling every seven days, then now about 116,000 people have and in the next week about 116,000 more people in the U.S. will catch coronavirus—which means 1/2700, currently 3000 of the 7.6 million inhabitants of San Francisco Bay. Touch a hard surface that any of those 3000 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?

Catch Our Breath...

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



Notes

