

Discussion of
Alon, Kim, Lagakos, VanVuren
ARC Conference, IMF
November 4, 2021

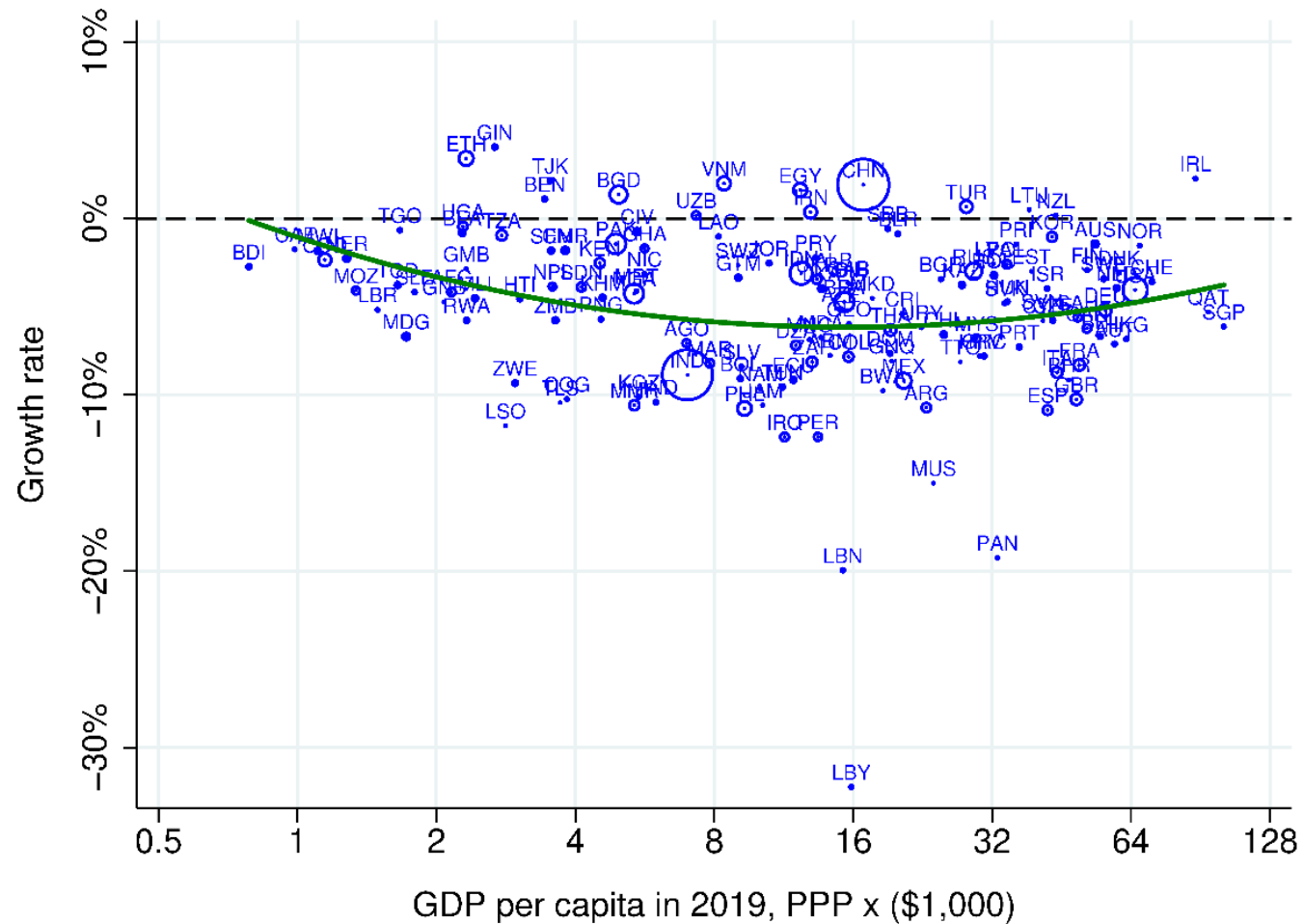
Jonathan Heathcote
Federal Reserve Bank of Minneapolis

The views expressed herein are my own and not necessarily those of the Federal Reserve Bank of Minneapolis or the Federal Reserve System

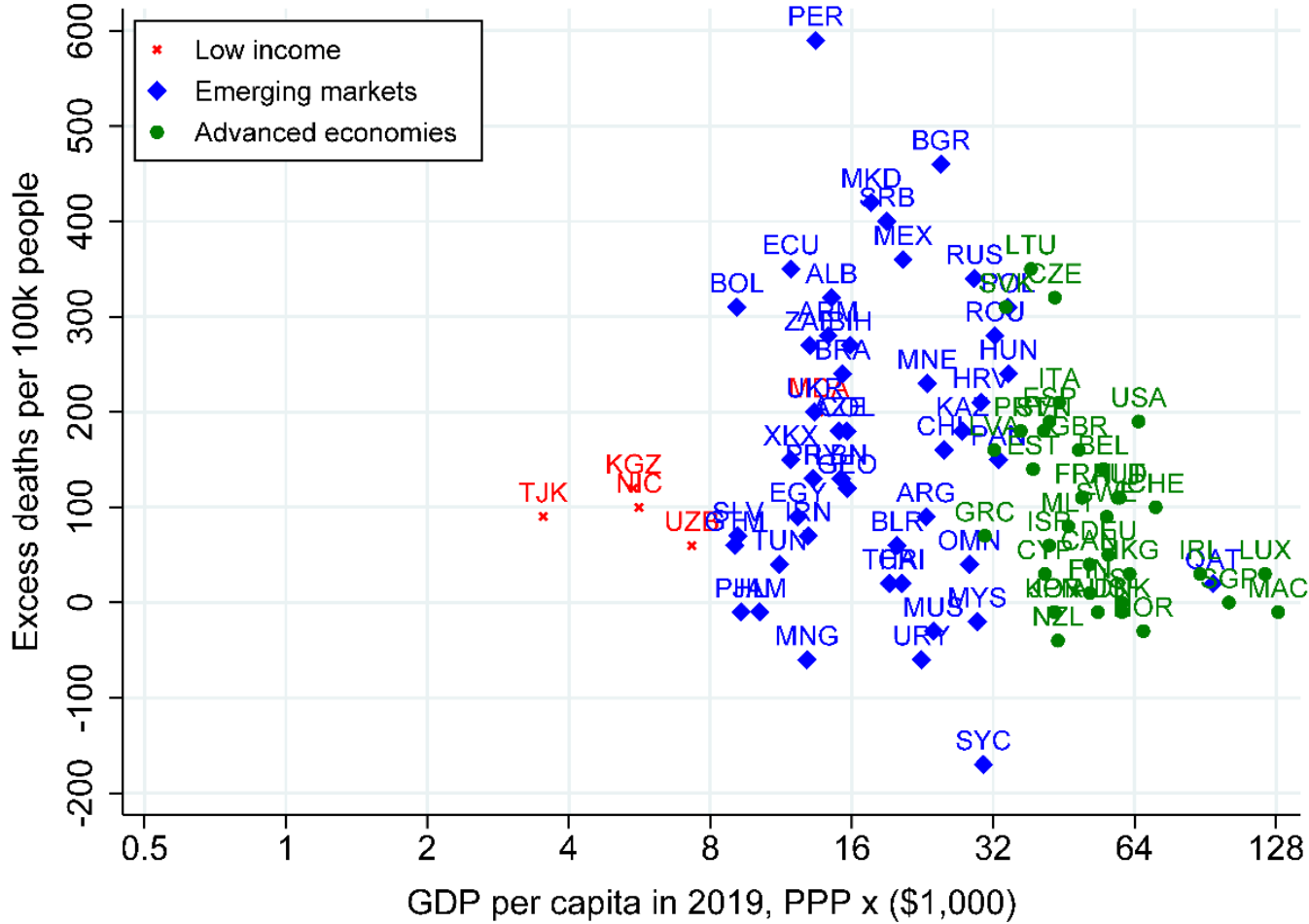
Empirical exploration

- Huge variation in COVID impact across countries
- U-shaped relationship between per capita income and
 - (1) GDP decline
 - (2) Mortality
- Middle income “emerging markets” countries saw bigger GDP declines than “developed” economies, higher COVID mortality
- Poor “developing” countries experienced milder GDP declines, perhaps fewer COVID deaths

GDP Growth 2019-2020



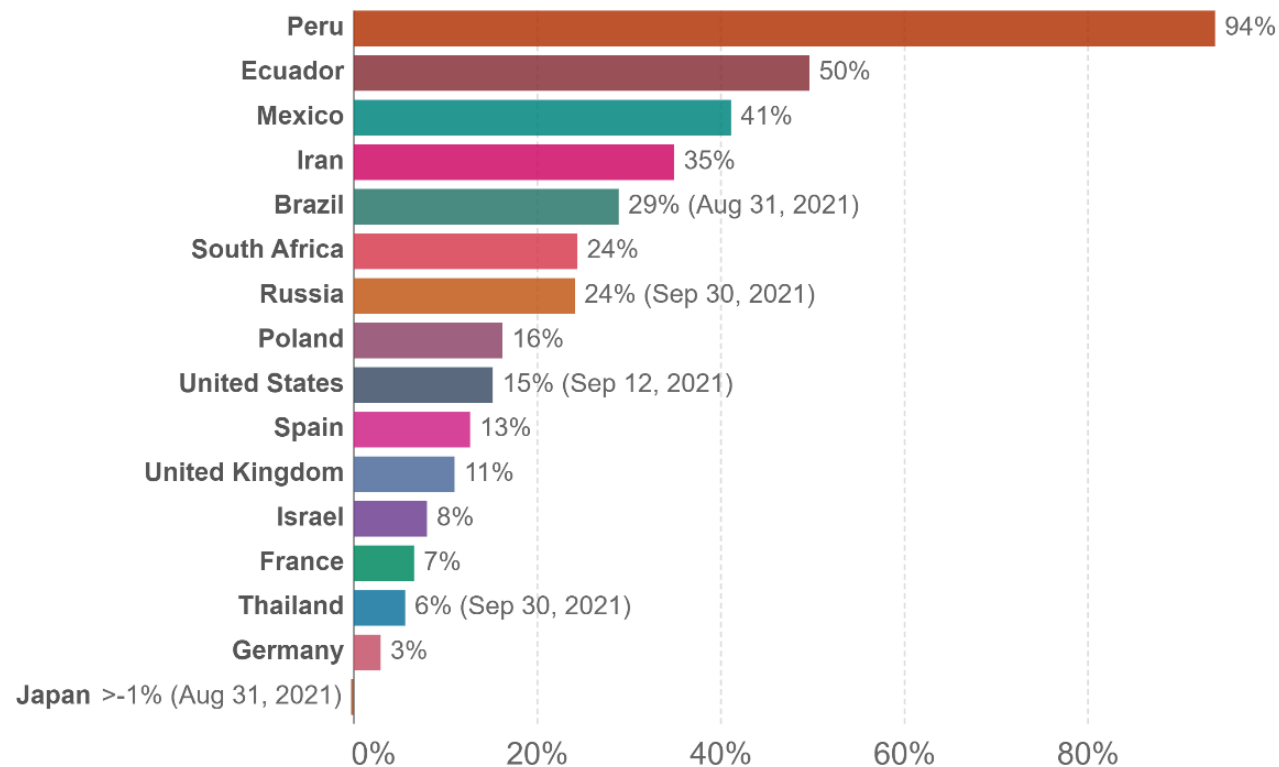
Excess Deaths (Karlinsky and Kobak, 2021)



Excess mortality: Cumulative deaths from all causes compared to projection based on previous years



The percentage difference between the cumulative number of deaths since 1 January 2020 and the cumulative projected deaths for the same period based on previous years. The reported number of deaths might not count all deaths that occurred due to incomplete coverage and delays in death reporting.



Source: Human Mortality Database (2021), World Mortality Dataset (2021)

OurWorldInData.org/coronavirus • CC BY

Note: Comparisons across countries are affected by differences in the completeness of death reporting. Details can be found at our Excess Mortality page.

Many drivers of COVID impact vary with income

- Age distribution
 - Poorer countries are younger, and COVID mostly hits the old
- Sector distribution
 - How much social contact does production involve?
- Lockdown stringency
 - Most extensive in emerging markets economies
- Extent of public support for the economy
 - Much larger in developed economies
- Healthcare capacity
 - Larger in richer countries

Quantitative SIR model identifies 2 key drivers

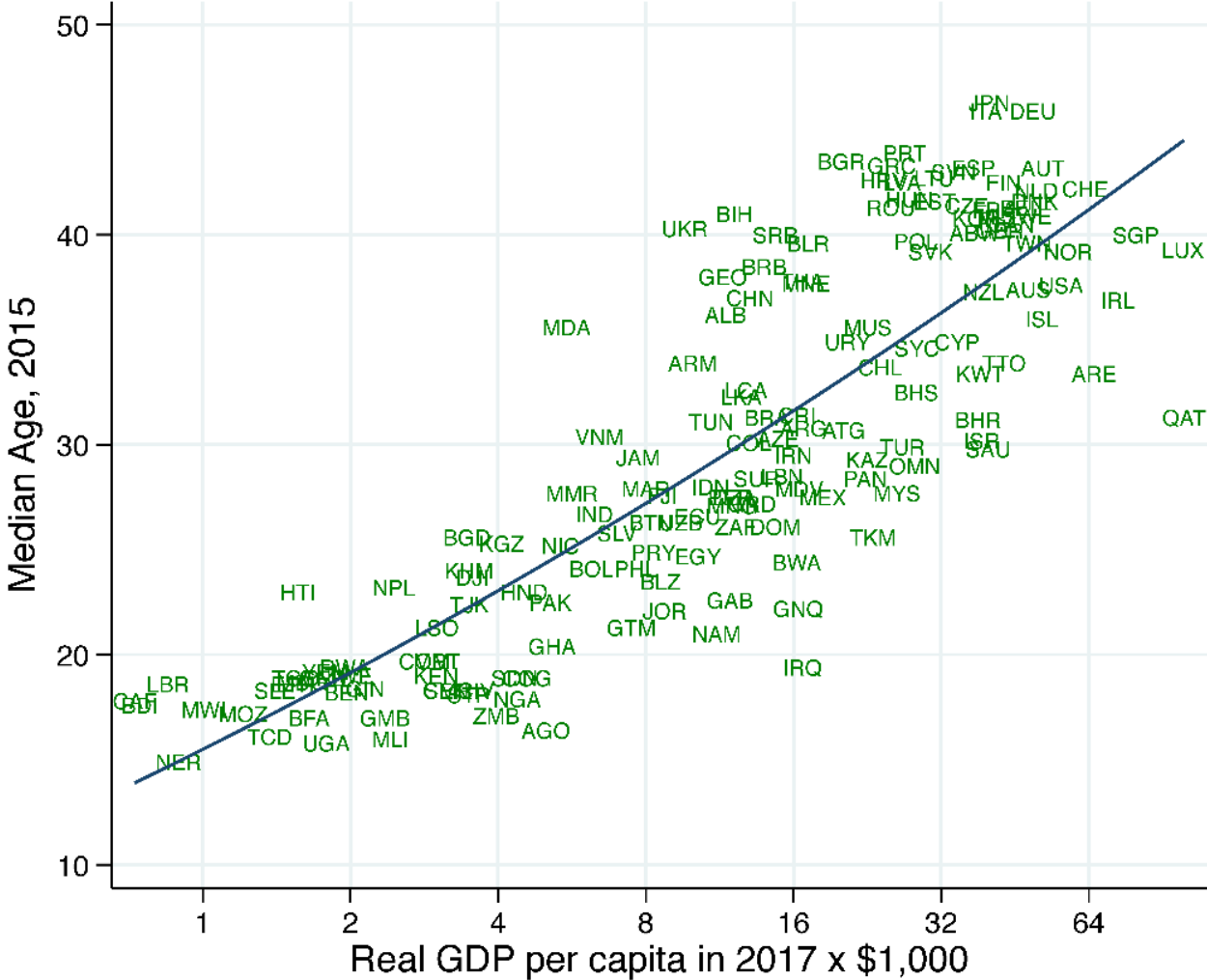
1. Age Distribution

- Older people are much more likely to die from COVID:
 - IFR for >65 is 40 x IFR for <65
- Developing countries are much younger

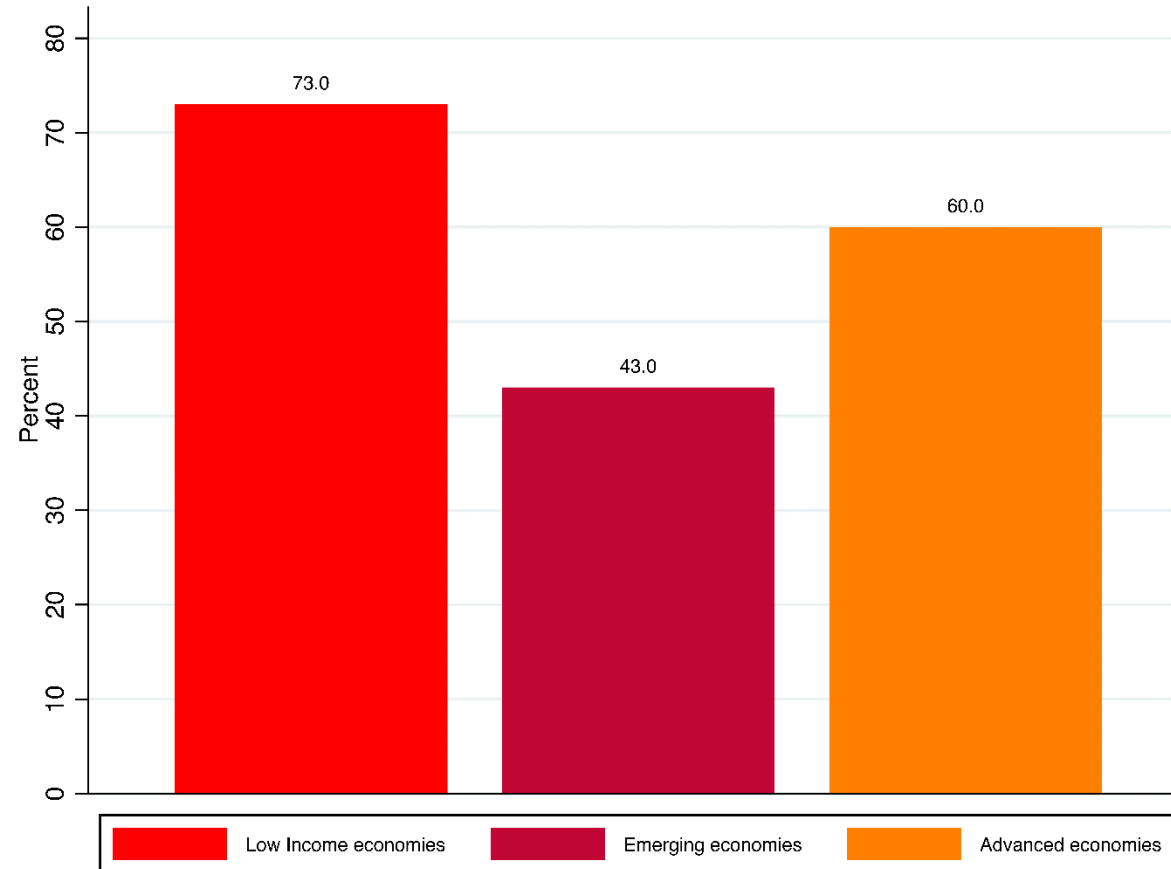
2. Sector Distribution

- Agriculture and work-from-home jobs reduce COVID exposure
 - Developing countries have large ag. sectors
 - Developed countries have lots of jobs that can be done from home
 - Emerging market countries have neither => hardest hit by COVID

Median Age



Non-Social Sector Employment



Comments

- Message that the age distribution is critical is right
 - Because of this, very poor countries have fared relatively well
 - May not be true of future pandemics
- Message that amount of social contact in economic activity is critical also correct. Think food consumption:
 - Subsistence family farming => relatively little transmission
 - Order groceries online for delivery => relatively little transmission
 - Visit crowded public market daily => lots of transmission

Other Factors

- Lockdowns?
 - Hard to measure stringency
 - Authors' measure doesn't vary much across country groups
 - But we know lockdowns can have a huge impact (China)
- Social contact at home also probably important (Bayer and Kuhn)
 - Multi-generational living more common in poorer countries
 - Some countries are more social than others
- Extent of public economic support?
 - Model doesn't really explore impact of this
 - Huge US stimulus / UI spending reduced depth, duration of COVID recession

Model details

- What drives output losses and disease spread in the model?
- Switching to working from home:
 - Reduces disease spread by 40%
 - Reduces productivity 38% for social sector worker, no reduction for non-social sector
- Choice about whether to work from home depends on:
 - Productivity loss
 - Idiosyncratic preference shock
 - Concern about COVID infection
- => Non-social workers tend to choose work from home (no wage loss)
- Social sector workers reluctant to work from home (huge wage loss)

Lockdowns

- Force a fraction of people (at random) to work from home
- Lockdowns in the model are not targeted:
 - => Mechanical that lockdowns reduce output less with larger non-social sector
- If govt. could target lockdowns, would it target the social sector? (like actual lockdowns)

Quantitative findings

- Model can explain GDP decline differential between emerging and advanced economies
 - Bigger social sector in emerging economies => lockdowns and endogenous work-from-home reduce output more
- Model can (probably) explain low mortality in developing economies
 - Population is very young, and non-social sector is large
- Model does *not* replicate big mortality gap between emerging and advanced economies
 - Age distributions are not so different (84% vs. 83% young)
 - Larger emerging markets social sector somewhat offset by stricter emerging markets lockdowns

Why such high emerging markets mortality?

- Multi-generational living arrangements?
- Large informal sectors where lockdowns were ineffective?
- Poor public healthcare?
- Later / less effective vaccines?
- Bad luck?
 - Latin America vs South East Asia

Things to perhaps add to the model:

- Differential at-work infection risk across sectors
- Assume some or all of the old do not work
- Endogenize infection-generating rates