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Key message

The mechanism: deaths transferred from rich to poor countries

Lives saved in rich countries

Transmission from the North to South

In Africa, negative growth kills Positive growth does not save anybody

Quantifying the death transfer

Lockdowns in OECD countries have led to an additional 414,000 deaths in Africa They have also increased infant mortality in Africa by 8.2 percent

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A 4-step process:

- 1. Rich countries effect lockdowns which save lives
- 2. Averted deaths cost foregone economic growth
- 3. Lower economic growth in rich countries is transmitted to poor countries
- 4. Severe economic downturns in poor countries are associated with higher mortality

The goal here:

provide a quantification of the magnitude of this "death transfer"

For concreteness here we take:

"rich" = OECD "poor" = Africa

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- Surprisingly few estimates of deaths averted by lockdowns and other non-pharmaceutical policies: 3 papers in *Nature*
 - SIR epidemiological model: Flaxman et al.
 (2020)
 - Reduced form / event study econometrics:
 Hsiang et al. (2020), Askitas et al. (2021)
 - Deaths averted \approx 20 to 30 times actual number of deaths, but **very large** confidence intervals
 - □ Gelman's critique: behavioral change?
 - Ballpark estimate: 0.5–1m deaths averted in OECD countries?

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Intuition

- We actually know relatively little concerning the number of lives saved in rich countries thanks to lockdowns and other policies
- Different models give different numbers but the upshot is that there is a lot of uncertainty concerning how effective these policies were

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Transmission of negative growth from the OECD to Africa

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Predicted and actual

OECD growth

Predicted and actual African growth

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The annual growth rate of African countries is on average positively associated with

OECD growth: has fallen drastically openess to trade $\frac{X}{Y}$: highly variable by country



Transmission of negative growth from the OECD to Africa

Key message The mechanism: deaths	Relationship between African gr	rowth a	and OECD g	growth
transferred from rich to poor countries		edent variable:		
Lives saved in rich countries		Growth ra ctry FE	te of GDP/cap. ctry+yr. FE	
Transmission from the North to South		(1)	(2)	
Transmission of negative growth from the OECD to	Mean growth of GDP/cap in OECD	0.234^{*} (0.129)		
Africa Transmission of negative growth from the OECD to	Mean growth of GDP/cap in OECD $\times \frac{X}{Y}$		0.015^{*} (0.008)	
Predicted and actual OECD growth	R^2 Adjusted R^2	$0.205 \\ 0.113$	0.296	
Predicted and actual African growth	 Mean growth in OECD countil 	ries in	Q2 2020: –	-9.8%
In Africa, negative growth kills	• Mean $\frac{X}{V}$ in Africa: 28.2%			
Positive growth does not save anybody	 African growth lost to lockdo 	owns ir	OECD:	

 $9.8 \times 0.015 \times 28.2 \approx 4.14\%$

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• Half of change in IMF growth forecasts for Africa 9/22

Predicted and actual OECD growth

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Predicted and actual OECD growth

Predicted and actual African growth

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Expected growth

Observed growth

Predicted and actual African growth

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African growth



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- Transmission from the North to South Transmission of
- negative growth
- from the OECD to Africa
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- from the OECD to Africa
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Intuition

- Economic slowdowns in OECD countries get transmitted to poor African countries
 - The more an African country is open to international trade, the more it suffers from slowdowns in the OECD
- The growth rate of African countries has fallen by over 4 percentage points as a result of the slowdown in rich OECD countries
- This is completely separate from any negative direct effect on African growth of COVID-19

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African recessions and African mortality

African recessions and African mortality: 5 years averages

Crude death rate, using annual data ...and this is an African phenomenon

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African recessions and African mortality

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Growth of GDP per capita has a highly asymmetrical effect on mortality in Africa: **negative growth kills**



African recessions and African mortality: 5 years averages

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- In Africa, negative growth significantly increases mortality
- Positive growth has NO effect on mortality

	Dependent variable:					
	infant mortality		15-50 mortality		U60 mortality	
	(1)	(2)	(3)	(4)	(5)	(6)
Mean growth	-0.469^{*} (0.243)		-2.414^{**} (0.988)		-2.963^{**} (1.187)	
Mean growth \times growth < 0		-1.408^{**} (0.625)		-6.187^{**} (2.725)		-7.878^{**} (3.160)
Mean growth \times growth > 0		0.010 (0.299)		-0.487 (1.112)		-0.454 (1.506)
Adjusted R ²	0.879	0.881	0.600	0.604	0.737	0.740

Crude death rate, using annual data ...and this is an African phenomenon

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poor countries	VARIABLES	Developin	Developing countries		ountries
Lives saved in rich countries	Trend of GDP per capita	0.022	0.046	-0.852***	-0.737***
Transmission	Negative GDP per capita growth	(0.170)	(0.162) -0.039	(0.257)	(0.203) -0.137**
			(0.031)		(0.057)
growth kills	Positive GDP per capita growth		0.006		-0.003
Positive growth does not			(0.017)		(0.029)
save anybody	GDP per capita growth	-0.024		-0.062*	
African recessions		(0.016)		(0.032)	
	Constant	10.017***	9.758***	20.005***	18.934***
African recessions and African mortality: 5 years averages		(1.311)	(1.238)	(1.862)	(1.482)
Crude death rate,	Observations	3,537	3,537	1,410	1,410
using annual data	R-squared	0.250	0.251	0.460	0.469
and this is an African	Number of countries	118	118	47	47

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- Crude death rate, using annual data ...and this is an African phenomenon

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Intuition

- Higher **levels** of GDP per capita in Africa are good for health and are associated with lower levels of mortality
- But higher levels of **positive growth** of GDP per capita **do not reduce mortality**
 - Conversely, **negative growth** of GDP per capita increases mortality at all ages, from infants to adults

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Tying it all together

The upshot

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Two sobering back-of-the-envelope calculations

95% of Africa's population is under 60 Fall in African growth due to lockdowns in the OECD

 \times marginal effect of African growth on under 60 mortality rate = increase in under 60 mortality rate

 $4.14 \times 7.87 = 32.58$

 $\Rightarrow \frac{32.58}{100,000} \times 1.27 \times 10^9 \approx 414,000 \text{ additional}$ African deaths due **solely** to lockdowns in OECD **COUNTRIES** (Compare! 100,000 African deaths attributed to COVID) **Infant (0-1) mortality rate** (71 per 1,000 in 2020) Has been increased by: $4.14 \times 1.408 = 5.83$ Lockdowns in the OECD have essentially wiped out the gains of the past 5 years...

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- Remember that public health numbers are measured in different units when you look at, say, WHO data
 - □ Under 60 mortality is measured per 100,000
 - □ Infant mortality is measured per 1,000
 - The lockdowns in OECD countries have
 - Led to an additional 414,000 deaths in Africa
 - □ Increased infant mortality by $5.83 \div 71 = 8.21$ percent

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- Our point of view is that the world should take COVID-related deaths in Africa seriously: this is **not** a small problem
- There is no doubt that deaths induced directly by
 COVID in Africa are underestimated
 - But the north-south transfer of COVID deaths is perhaps an even greater problem, that should be taken up in the appropriate international fora

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