

# Discussion of “Deadly Debt Crises: COVID-19 in Emerging Markets”

by Arellano, Bai and Mihalache

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# Summary of the paper

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# Goals of this paper

- Quantitative framework of the epidemic & debt crisis:
  1. Epidemic  $\rightarrow$  debt crisis, and
  2. Debt crisis makes the epidemic worse.
- Use this framework to study
  1. Optimal joint {lockdown + debt + default} policies
  2. Debt relief interventions

# Basic ingredients of the framework

- **SIR+D** epidemiology model
  - Boils down to an **endogenous** transition matrix between **S**usceptible, **I**nfected, **R**ecovered and **D**eceased.
- **Sovereign default** model
  - Long-term debt
  - Smooth default technology:  $d_t \in [0, 1]$
  - Deterministic
- Connection: mitigation policies (lockdown) + mortality-in-the-utility func.
  - Forced leisure → “stay at home”
  - Pro: saves lives      **Con:** contracts output → debt crises
  - Feedback: debt crises makes mitigation policies costlier.

## Two equations

Bond price is given by:

$$q_t(\mu_{t+1}(\mu_t, B_t), B_{t+1}) = \frac{1}{1+r} \{(\delta+r)(1-d_{t+1}) + [1-\delta+\kappa(\delta+r)d_{t+1}] q_{t+1}(\mu_{t+2}, B_{t+2})\}$$

where  $\mu_{t+1} = \boldsymbol{\mu}_{t+1}(\mu_t, B_t)$ : eqbm. evolution of the S-I-R shares.

Optimal (interior)  $d_t$  policy satisfies:

$$-\tilde{z}(1-L_t)N_t\gamma'(d_t) = [1 - \kappa q_t(\mu_{t+1}, B_{t+1})] (\delta+r)B_t$$

LHS: Mg. cost of partial defaults: decreased output

RHS: Mg. benefit: *saved* resources from not-paying

# Findings

- Optimal joint response:
  - Use all tools: lockdown, borrowing and default.
  - Long and hard crisis: lockdown lasts 8 months, debt crisis lasts 40 months, large welfare losses (.5% of population dies).
  - Still, much better than “No lockdown” and “Exogenous lockdown”
- Initial debt matters: less debt, more fiscal space, better smoothing of the crisis, fewer deaths.
- Debt relief initiative (ex-post):
  - Int'l agency buys 10% of debt.
  - Welfare gains for the borrower, capital gains for the lenders.
  - Overall positive social value.

# My Comments

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**Punchline:** Ambitious project. I like it.

## **Specific comments:**

1. Numerical results and robustness
2. Debt relief: buybacks (?), haircuts, ex-ante vs. ex-post incentives
3. Looking ahead: high debt, and (rising) world interest rate
4. (Many) Other small comments → email



# Numerical results and robustness

**Caveat:** I understand that the numerical results are *work-in-progress*

## 1. Robustness in the SIR-D block:

- We “know” the estimation of these parameters is very sensitive to new data  
Let’s use the standard errors around them (Online Appendix)
- Tracking  $\mathcal{R}_t$  (ND graduate Carlos Rondon-Moreno and co-authors):  
<http://trackingr-env.eba-9muars8y.us-east-2.elasticbeanstalk.com/>

Real-time (Bayesian) estimates of  $\mathcal{R}$  for 124 countries.

# Numerical results and robustness

## 2. Robustness/calibration in the Sovereign Debt block

- (Some) Default costs parameters are borrowed from Arellano, Mateos-Planas, and Rios-Rull (2019). Ideally calibrate/estimate within **this** model.
- Examples of some clarifications (things I didn't fully get):
  - Is the “Pre-pandemic” model calibrated to a  $d_{ss} = 0\%$ ?
  - After the pandemic, the economy will have  $N < 1$ , then **that** has to be the terminal  $V$  for the backward solution. Right?
  - Why do we need to define  $q^{CDS}$  to compute the spreads? Can't we define a spread using  $q$ ?

# Debt relief

- An int'l agency buys and **extinguishes** a fraction of debt.  
Jargon: this is not what we usually understand as *buybacks*  
Doesn't consider *liquidity* needs of a borrower to buy (back) its own debt.
- Voluntary debt exchanges (Hatchondo, Martinez, Sosa-Padilla 2014): there is a mutually beneficial opportunity to reduce debt burden and increase market value.
  - This needs long-term debt ('wrong' side of the Laffer curve)
  - I think these opportunities also show up here.
- Ex-ante vs. ex-post considerations: don't think they are relevant here.

## Debt relief (cont'd)

- New paper with Leo and JC: *Sovereign Debt Standstills* (tune in on Thursday :).
- We study (quantitatively) the merits of debt relief proposals that focus on “standstills”.
  - grace periods given by creditors so that countries can cope with large negative shocks – like COVID19 – without having to make coupon payments on their debts.
- Show that in general it's not a good idea (creditors don't want to participate)
- But haircuts are a better relief policy

# Looking forward

- Even 'after' the pandemic ( $t > H$ ), the debt is high
- It's sensible(?) to expect that advanced economies will eventually raise rates
- Johri, Khan and Sosa-Padilla (2020), Paluszynski (2020) : high  $B$  + high (and increasing)  $r^*$  are an **explosive combo**.
- Open questions to the authors and the audience:
  1. Should we expect even more default crises after the pandemic?
  2. Does that change the evaluation of which debt relief policies we push **now**?

**AGAIN:** Very nice paper/project, ambitious and policy-relevant.

Looking forward to the next iteration!