The SIR (*Susceptible-Infected-Recovered*) Pandemic Model and the Philippine's quarantined economy

Ms. Maria Cynthia M. Sison
Discussant/Officer-In-Charge
Supervisory Policy and Research Department

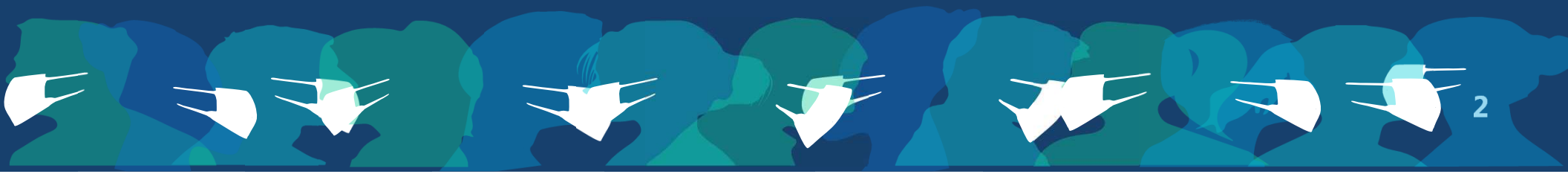
Findings of the study

HEALTH AND WELL-BEING OF THE POPULACE. Without containment measures, infection and death rates would have been more severe compared to actual figures which consider impact of containment measures

INDICATOR	WITHOUT CONTAINMENT MEASURES	WITH CONTAINMENT MEASURES
Infection Rate	2.5% in 75 to 80 weeks	1.1% in 81 weeks
Crude Death Rate	0.7% in 105 weeks	0.02% in 81 weeks
Consumption Activities	Steady decline to reach a trough of 19.2% in 81 weeks	Decline each time business restrictions are imposed ▪ 21.9% in 3 to 12 weeks ▪ 20% in 52 weeks ▪ 18 to 19% in 100 weeks

ECONOMIC ACTIVITY. Consumption activities would register a steady decline in the absence of containment measures compared to repeated declines each time business restrictions are imposed.

The *roll-out of a vaccination program* would minimize the percentage decline in consumption and help speed up the return of economic activities to normalcy.



Take-Aways from the Paper

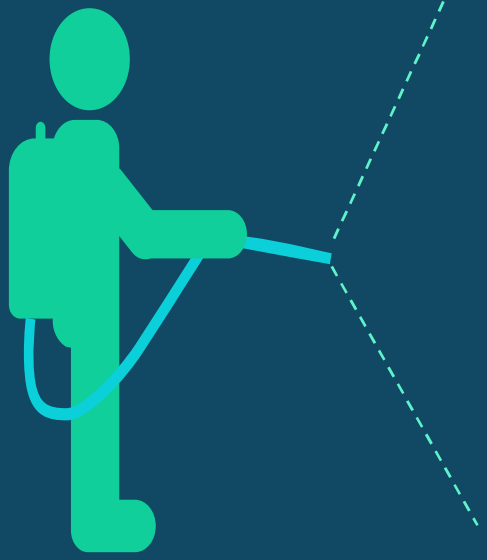
Use of diverse set of data in the study is commendable

- Pandemic data and the containment policies, provide a good snapshot of the Philippine situation for the past year and a half
- Mobility data from Apple and Google are good examples of new information sources made available by the advent of technology
- Author highlights interaction between pandemic data, containment measures and economic data (i.e., consumption and labor hours)

Presents a unique and interesting approach to creating an aggregated measure of containment policies for the economy. Information would be useful for policy makers.

- Identify sectors that have been hard hit by the pandemic
- Extend dataset to estimate impact of pandemic on financial viability of industry sectors
- Calibrate historical default rates for an industry sector for purposes of refining and sharpening assumptions that are used as inputs to the BSP's stress testing exercise

Areas for Consideration and/or Future Study



The S-I-R model assumes a **closed loop system** with a **constant number of "susceptibles"**.

- The advent of globalization and ease of travel which facilitated re-entry of Overseas Filipinos coupled with the emergence of more potent virus strains need to be considered.
- Study may have yielded conservative estimates under a without containment scenario.

Examine experience in other countries which imposed containment measures but did not post decline in output growth. Future studies can consider:

- Impact of testing policies in addition to containment policies and roll-out of vaccination program
- Early implementation of containment policies

The SIR (*Susceptible-Infected-Recovered*) Pandemic Model and the Philippine's quarantined economy

Ms. Maria Cynthia M. Sison
Discussant/Officer-In-Charge
Supervisory Policy and Research Department