



REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY

The total cost of COVID-19 and quarantines on the present and future generations

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Key findings

Key findings

1. The long-run total cost of COVID-19 and the quarantines to present and future society is estimated at **PHP 41.4 trillion** (in NPV terms).
 - a. 2020: PHP 4.3 trillion
 - b. Long-run (next 10 to 40 years): PHP 37.0 trillion
2. Consumption and investment will be lower in the next 10 years due to lower demand in sectors that require social distancing (e.g., amusement, tourism, restaurants, public transportation).
 - a. Consequently, tax revenues will be lower.
 - b. Note: after the 10th year, the economy is expected to converge to the pre-pandemic growth path.
3. Workers' productivity will be lower due to death, illness, and lack of schooling. The impact on productivity is likely to be permanent (i.e., over 40 years of working age).

Key findings

The long-run total cost of COVID-19 and the quarantines to present and future society is estimated at **PHP 41.4 trillion** (in NPV terms).

Forgone items (all in PHP billions)	2020	Next 10 to 40 years	Total
Total	4,321	37,044	41,365
Consumption	2,090	2,412	4,502
Private investment and returns	1,835	19,501	21,336
2020 investment and its returns	1,835	1,437	3,271
Future year investment and returns	N/A	18,064	18,064
<i>Of which: taxes (CIT, VAT, and PIT)</i>	<i>782</i>	<i>424</i>	<i>1,206</i>
Human capital investment and returns	397	15,131	15,528
Education (school year 2020-2021)	230	10,795	11,025
Health (both COVID-19 and non-COVID-19)	167	4,336	4,503

Sources: PSA, NEDA, PIDS, ADB, and WB

Note: the NPV of nominal GDP in the next 10 years is PHP 205 trillion. Physical capital horizon is 10 years given convergence period while human capital horizon is 40 years (i.e., productive years of a person, age 22 to 65).



Photo Credits: (Nikkei Asia, 2021)

***Present cost:
COVID-19 and the
quarantine's impact on
the economy and the
people***

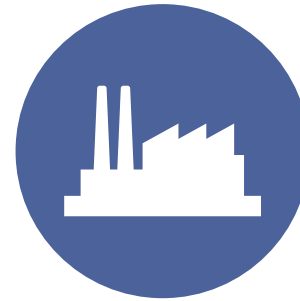
COVID-19 and quarantine impact on the economy and the people.



1. As of Sep 15, 2021, around 2.3 million COVID-19 cases and 35,500 deaths.



2. Community quarantine lasting 18 months already.



3. In 2020, economic growth fell to -9.6 percent.



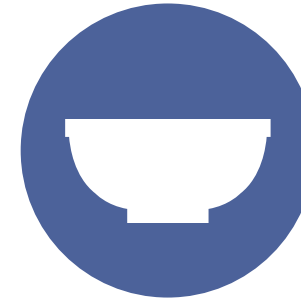
4. Some 10.1 percent of firms (111,052 out of 1,000,506) reported to have closed *temporarily*, and 0.4 percent of firms (3,807) reported to have closed *permanently*.



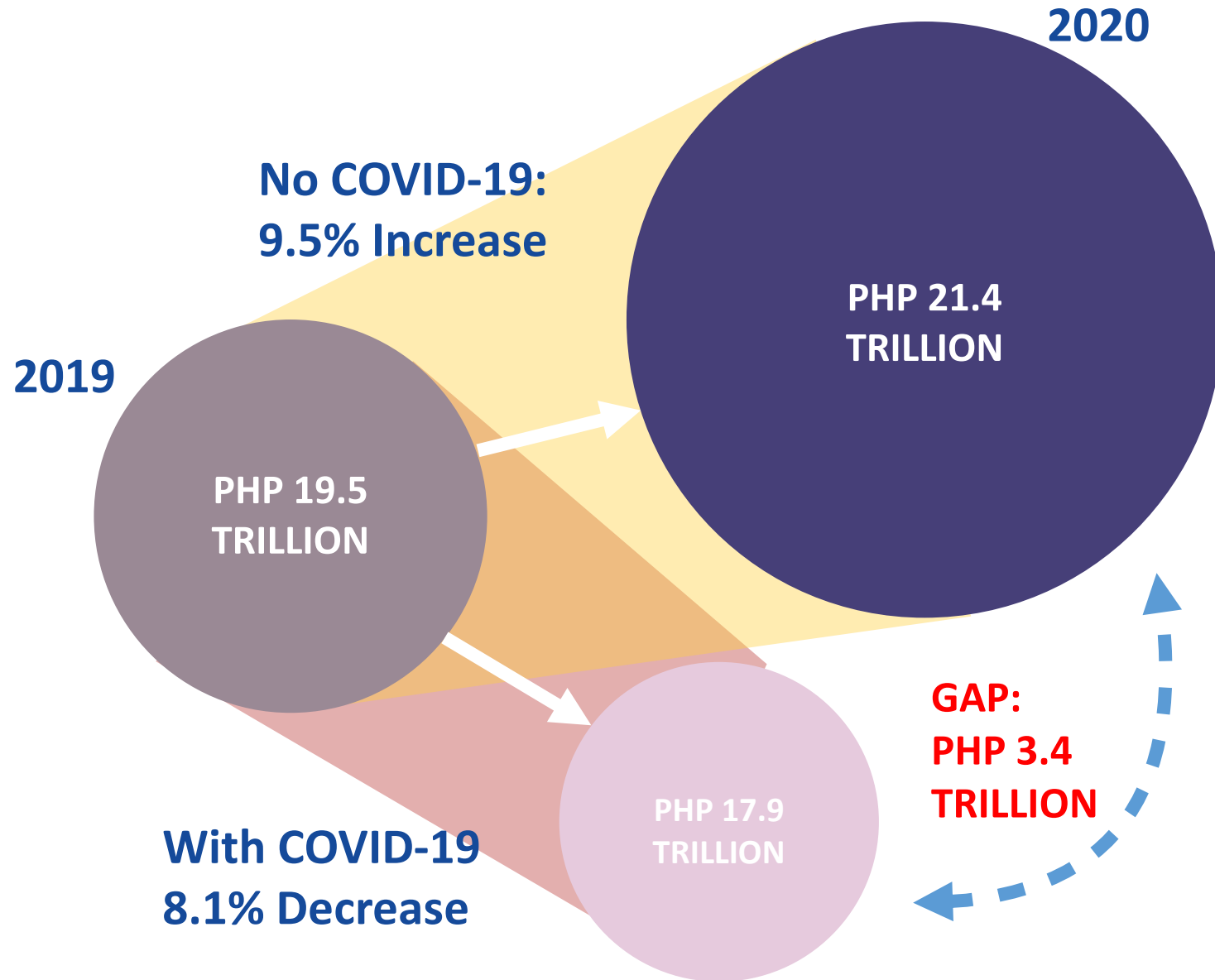
5. At the peak, 8.7 million workers lost their jobs; unemployment rate reached 17.6 percent.



6. Total household wage and income loss of around PHP 1.04 trillion in 2020; average of PHP 23,806 per worker.



7. At the peak, one in four people in NCR were hungry.



Size of Philippine economy (GDP) with and without COVID-19

Tourism GDP fell by 61 percent in 2020, reducing its share of GDP from 12.8 percent in 2019 to 5.4 percent in 2020.

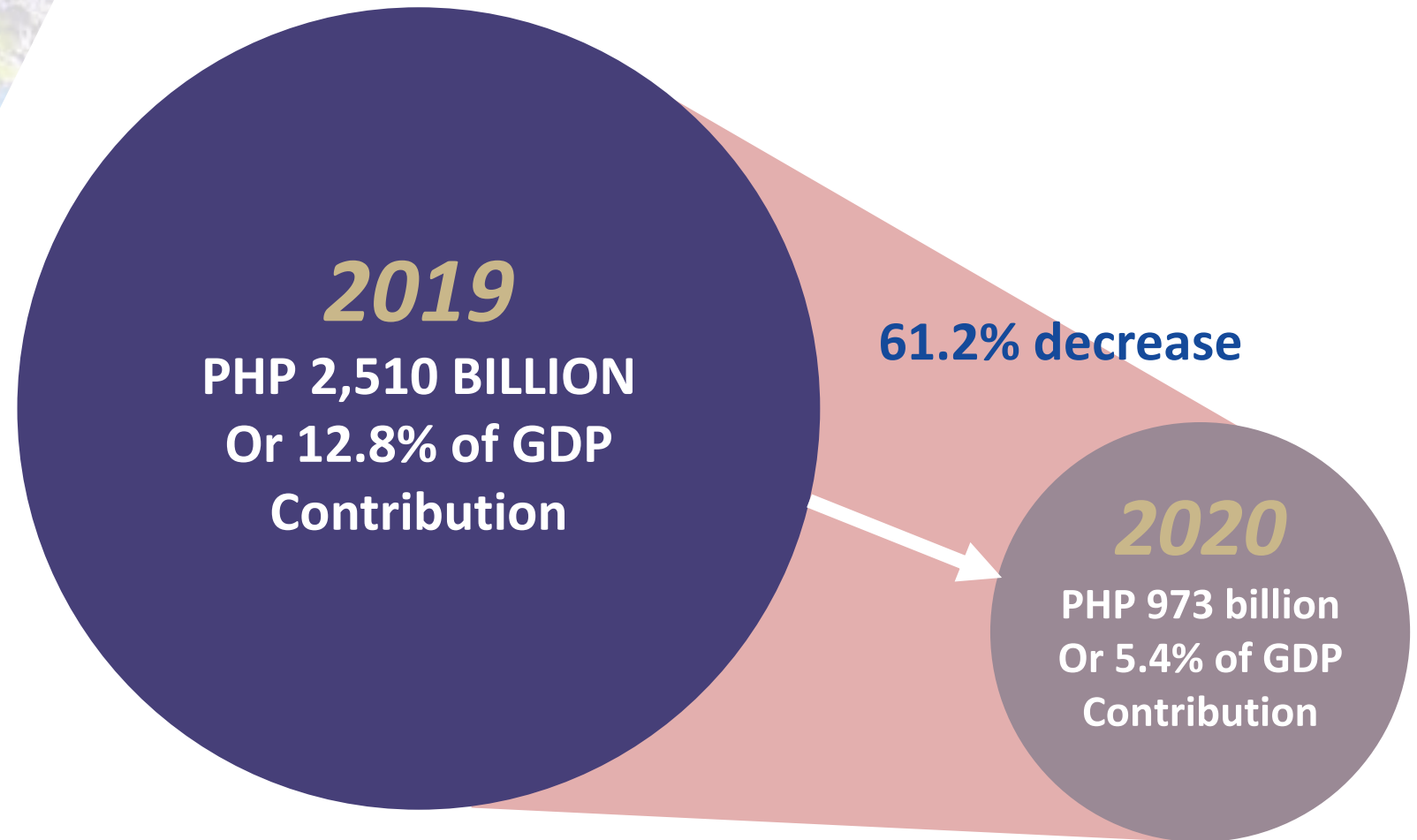
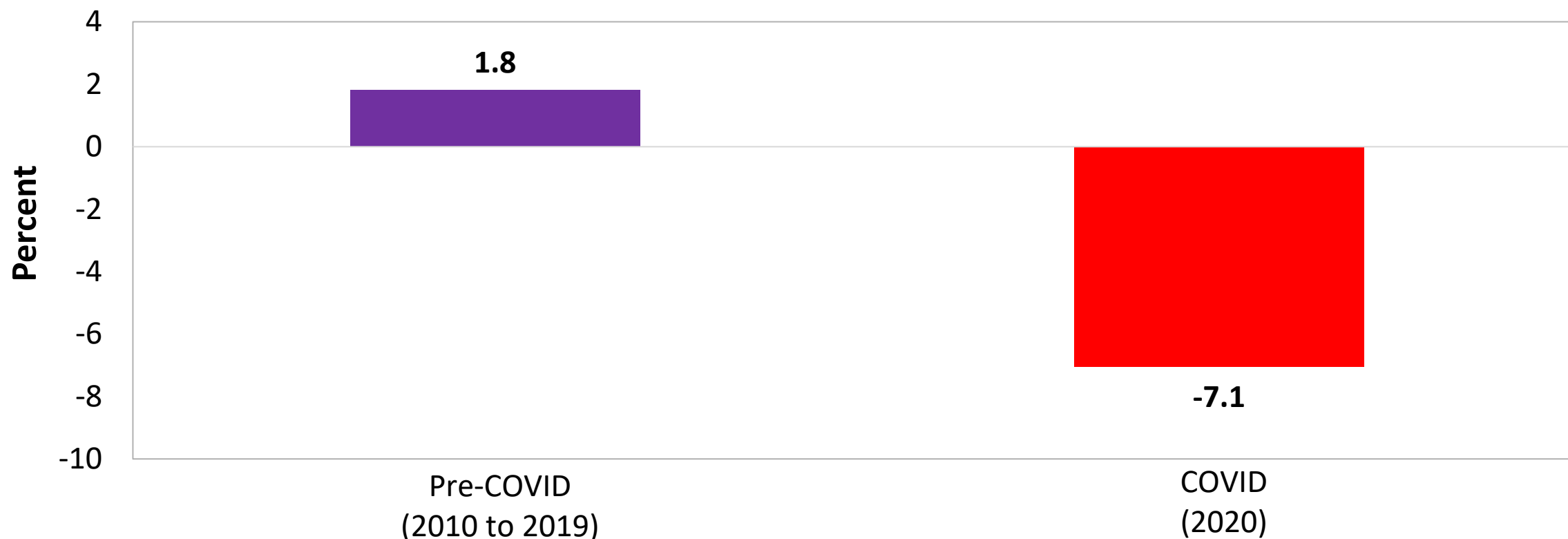


Photo Credits: (TripAdvisor, 2021)

GDP contraction in 2020 was mainly due to a sharp decline in productivity, as the quarantines prevented the efficient use of available capital and labor.

Total factor productivity contribution to GDP growth



Source: Penn World Table, PSA, and NEDA staff estimates



***Future cost of
forgone physical
investments,
returns, and taxes***

State of consumption and investment in the next five to ten years.

1. Forgone consumption and investments in 2020 will result in lower capital accumulation in the future.
2. Reasons for lower consumption and investment:
 - a. Social distancing rules,
 - b. Lower business and consumer confidence,
 - c. Rules keeping children at home.
3. Lower capital accumulation will result in lower financial returns and lower economic benefits for the people (*e.g.*, a factory not built will lead to less sales and less jobs; a road not built will not lead to time savings).
4. With lower revenues, income, and wages, future streams of tax revenues are also reduced.

Photo Credits: (ABS-CBN NEWS, 2020)



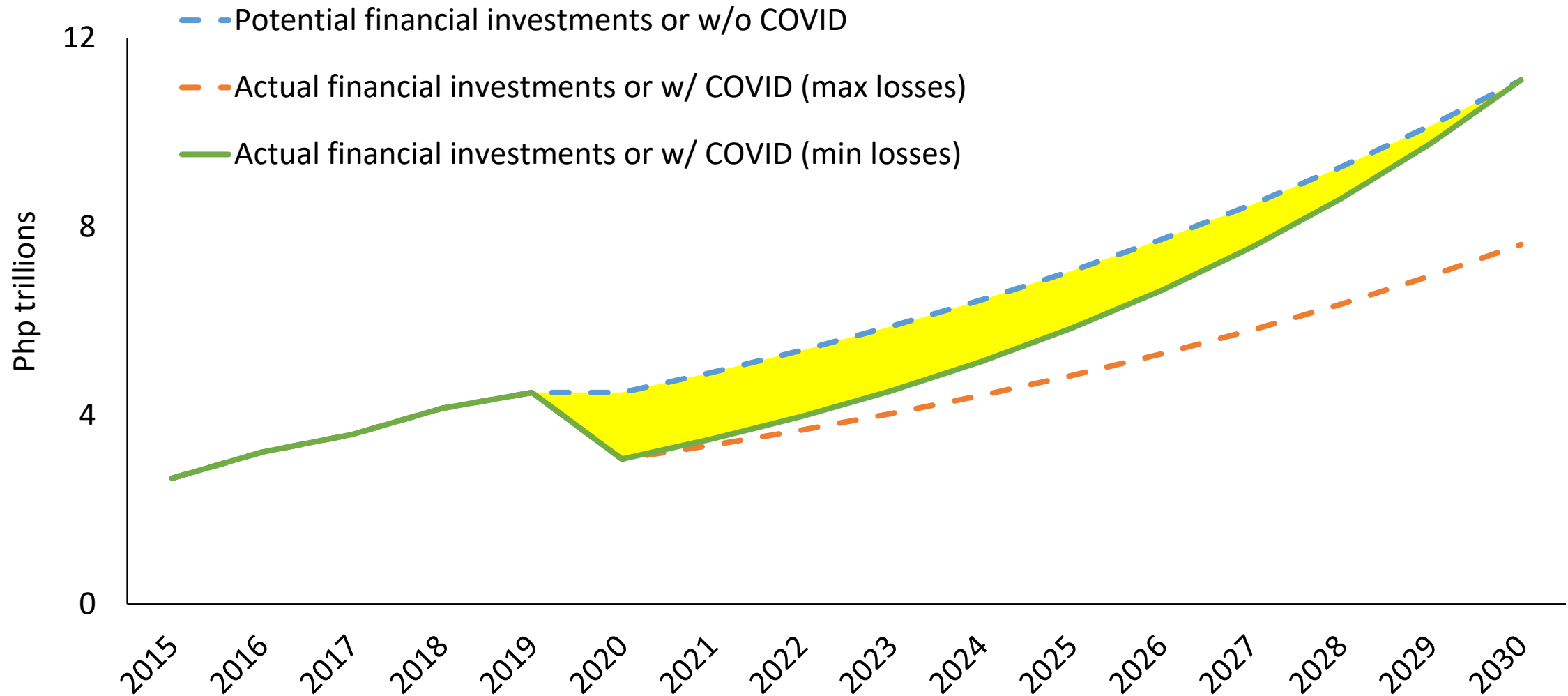
Summary of losses: Forgone consumption, physical investment, and returns (in PHP billions)

Forgone items (all in PHP billions)	2020	Next 10 years	Total
Total	3,924	21,913	25,838
Consumption	2,090	2,412	4,502
Private investment and return	1,835	19,501	21,336
2020 private investment and its returns	1,835	1,437	3,271
Future year private investment and returns	N/A	18,064	18,064

Sources: PSA, and NEDA staff estimates.

Note: Financial capital and return are subsets of economic capital and return and are not included in the totals.

It may take 10 years to catch up to pre-COVID-19 trajectory.



Forgone tax revenues due to lower future investments and output

1. Corporate income tax
2. Value-added tax
3. Personal income tax

Summary of losses: Forgone tax revenues (in PHP billions)

	2020	Next 10 years	Total
Total taxes	782	424	1,206
Corporate income tax	144	143	286
Value-added tax	271	138	409
Personal income tax	86	144	229
All other taxes	282	0	282

Sources: PSA, DOF, and NEDA staff estimates



***Forgone future
wages and
productivity due to
school closure***

State of education during COVID-19

1. School year 2020-21 did not have face-to-face learning. To our knowledge, no other country in East Asia closed their schools for face-to-face learning for an *entire* year.
2. Globally, there is evidence that children are only mildly affected by COVID-19 and rarely infect their teachers.
3. In the Philippines, only some 3 million households (**12.5 percent**) have children and seniors living together.
4. Due to lost income of parents and inability of some students to engage in distance learning, enrollment declined by **1.1 million** (or around 5 percent).
5. Some 865 private schools reportedly closed down.

State of education during COVID-19

6. Based on US studies, online learning is only around **52 percent** as effective as face-to-face learning.¹
7. Other forms of learning (e.g., module) may be less effective and is estimated at **37 percent** as effective as face-to-face learning.²
8. In a NEDA online survey, almost **60 percent** of families have one parent who skips work to teach their children. This results in **25 percent** forgone income.
9. School year 2021-2022 will begin with no face-to-face learning still and there is uncertainty when we will allow students to go to school physically.

Notes:

1. This is based on Dorn et al (2020) and represents how effective online learning is compared to F2F learning in the USA.

2. This assumes that the module system is around as effective as the ratio of the PHL PISA score to the USA. This is 71 percent and gives us the estimated effectivity of module learning as: $52\% \times (100 - 29) = 37\%$

Consequences of face-to-face school closure

1. Long-term COVID-19 impacts include less learning, and lower future income, productivity, and competitiveness.
2. In the 2018 PISA score, the Philippines' average score was **350**. In Singapore, this was 556, or a 37 percent difference. In the USA, this was 495 or a 29 percent difference.
3. According to the World Bank, the **12 years of expected schooling in the Philippines is equivalent to only 8 years of learning** adjusted based on the results of international assessments. This is likely to fall as a result of the long school closure.
4. According to the ADB, each year of lost schooling translates to around **10 percent** permanent lower wages in the future.
5. All these mean the pandemic and school closure are exacerbating the **already unequal access and lower quality** of education in the Philippines.

Human capital losses: Forgone future wages and productivity due to school closure

1. The estimated total cost of face-to-face school closure is PHP 11 trillion in lost wages over a 40 year period (i.e., the average working life of a person).
2. Sources of losses in 2020:
 - a. Private school teachers who lost their jobs as a result of school closures.
 - b. Parents who forego or reduce work to accompany their children in homeschooling.
3. Sources of losses over the next 40 years:
 - a. Loss in future wages and productivity due to at least one full year of school closure.



Summary of losses: Forgone future wages and productivity due to school closure (in PHP billions)

	2020	Next 40 years	Total
Education	230	10,795	11,025

Sources: ADB and NEDA staff estimates

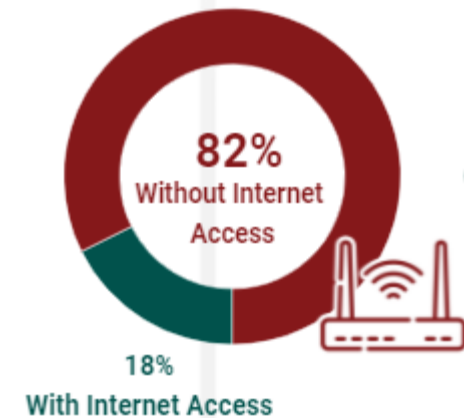
Note: This takes into account the estimated labor force participation rate of 65 percent for all working age Filipinos. It also assumes the effectivity of distance learning in the PHL is 71% as effective as in the USA based on the PISA ratio

Problems in schooling during the pandemic



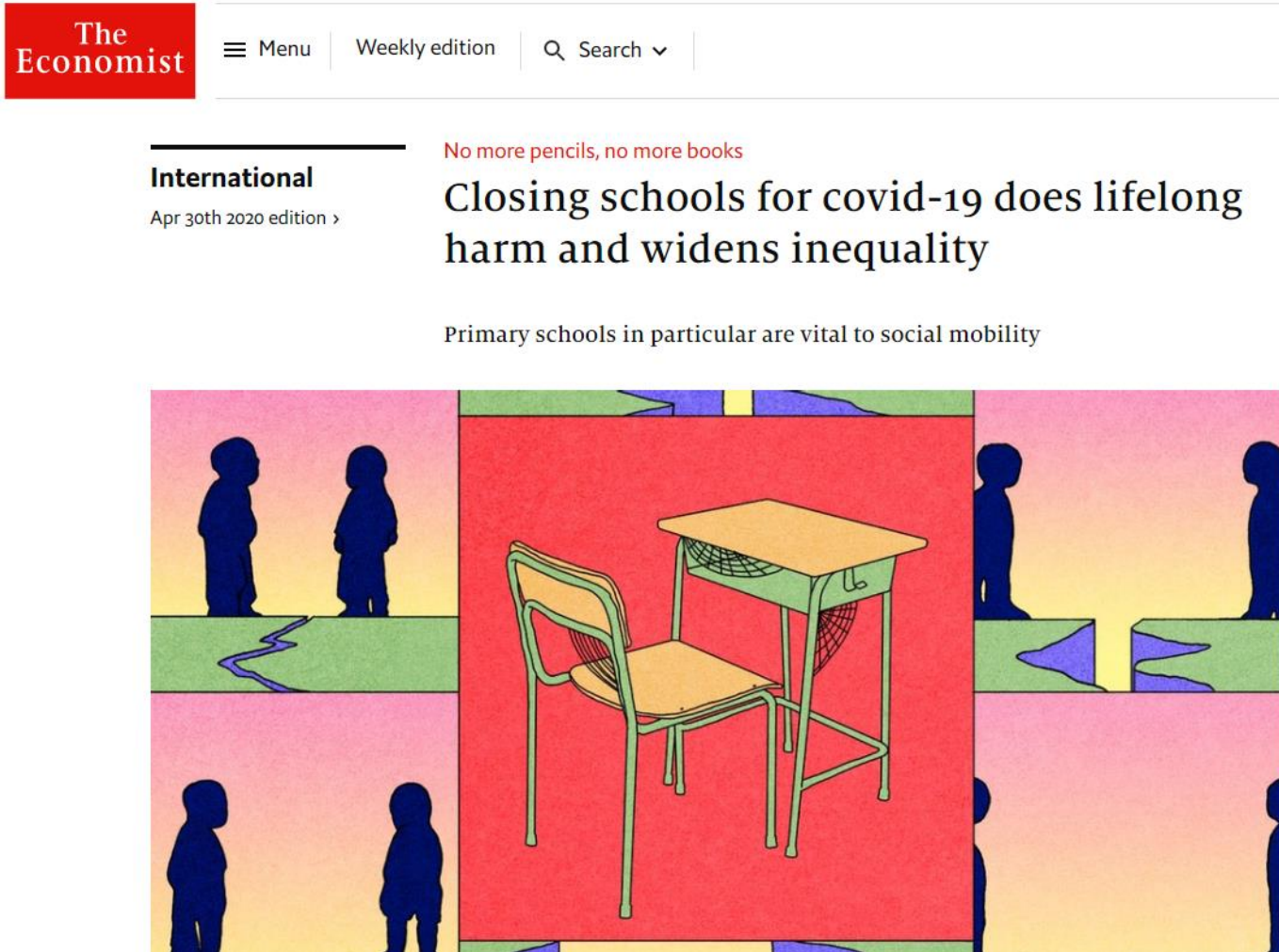
“Even if **teachers manage to broadcast** their lessons, **students may struggle** to join them. **Not everyone can get online...**”

Philippine share of HHs with internet access (2019)



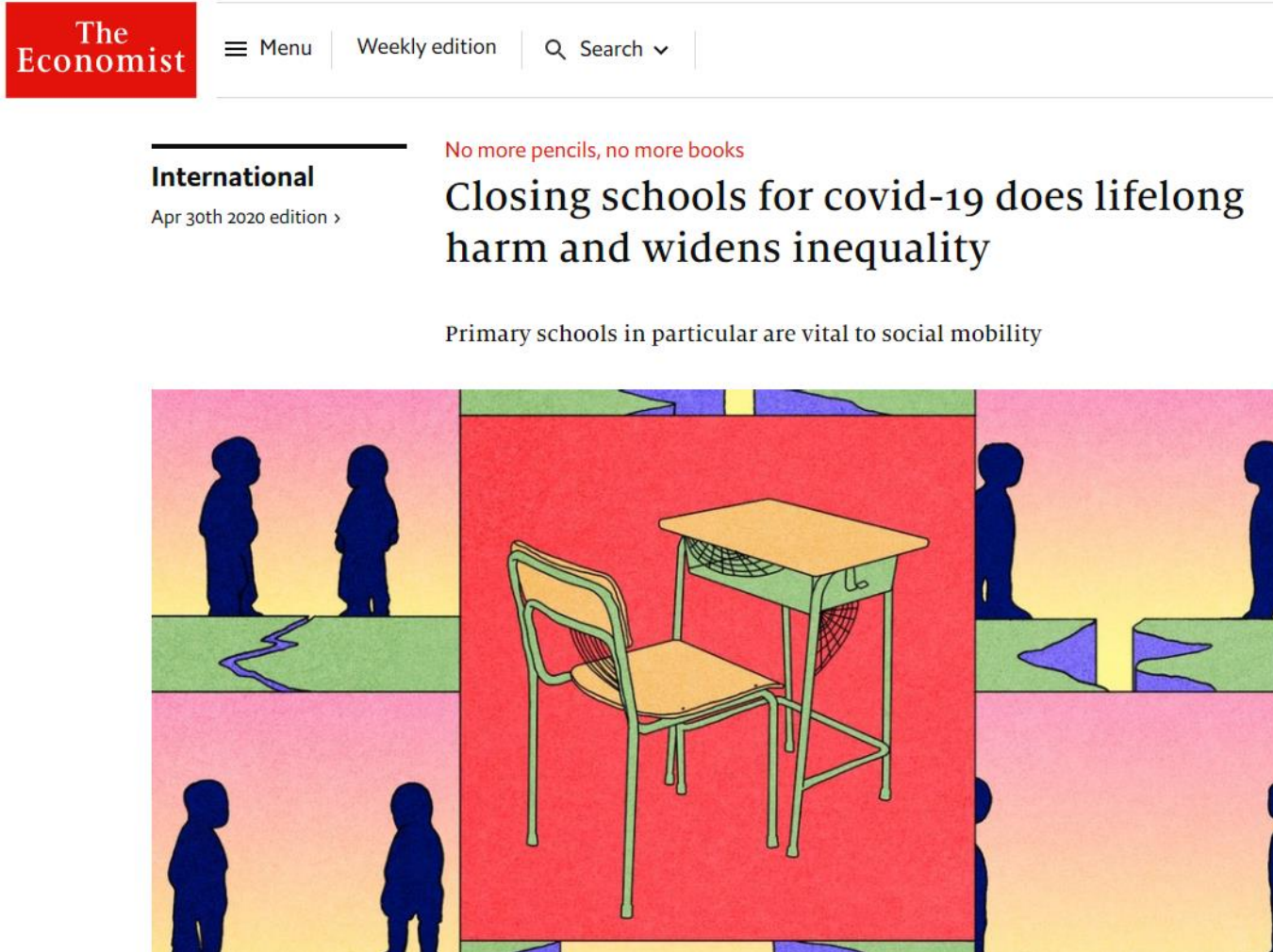
Source: DICT

Problems in schooling during the pandemic



“The extent and length of school closures...costs are horrifying. Most immediately, having to take care of children **limits the productivity of parents.** But in the long run that will be **dwarfed by the amount of lost learning.** Those costs will fall most heavily on those children who are most in need of education. Without interventions the **effects could last a lifetime.**”

Problems in schooling during the pandemic



“Closures will hurt the youngest school children most. “You can make up for lost maths with summer school. But you can’t easily do that with the stuff kids learn very young,” says Matthias Doepke of Northwestern University. Whereas older children can be plonked in front of a computer, **younger ones learn far more when digital study is supervised by an adult...Less well-off children everywhere are less likely to have well-educated parents who coax them to attend remote lessons and help them with their work.”**



Photo Credits: (Business World, 2021)

Forgone future wages and productivity due to COVID-19 and non-COVID-19 illnesses



State of health during COVID-19

1. As of Sep 15, 2021, COVID-19 cases reached around **2.3 million**, of which around 64,000 were severe to critical cases, and more than **35,500** died.
2. PhilHealth claims for high burden diseases such as cancer, diabetes, and hypertension have dropped by **75 percent** during the pandemic. This means that majority of the people are deferring health treatment due to lack of resources for healthcare, mobility restrictions, or the fear of getting infected in hospitals.
3. Around 1 in 3 children below 5 years old are **stunted** (short for their age), 1 in 5 are **underweight**, and 1 in 17 are **wasted** (low weight for their height).
4. Unwanted pregnancies increased by **320,000** over the 16 month quarantine period. The share of pregnant women receiving pre-natal care also dropped from **99 to 61 percent**.
5. More than **half** of Filipino workers faced a mental health challenge and **23 percent** of workers thought about quitting their job.

Consequences of COVID-19 on overall health

1. **Life expectancy** in the Philippines before COVID-19 ranged from 71 years for males and 77 for females.* This **could be 1 to 4 years shorter** based on international estimates from WHO, US CDC, and various universities. This results in forgone wages due to early death.
2. Many people who recover from COVID-19 experience other health concerns (e.g., brain fog, weakness, respiratory damage).
3. Many more people will become unable to work fully due to the inability to get treatment from other diseases. Both of these lead to lower productivity.
4. In addition, there are also additional healthcare costs associated with these various diseases and sickness.

*Source: PSA

Long-term effects of COVID-19 recovered people



Health

Conditions and Diseases | Treatments, Tests and Therapies | Wellness and Prevention | Caregiving

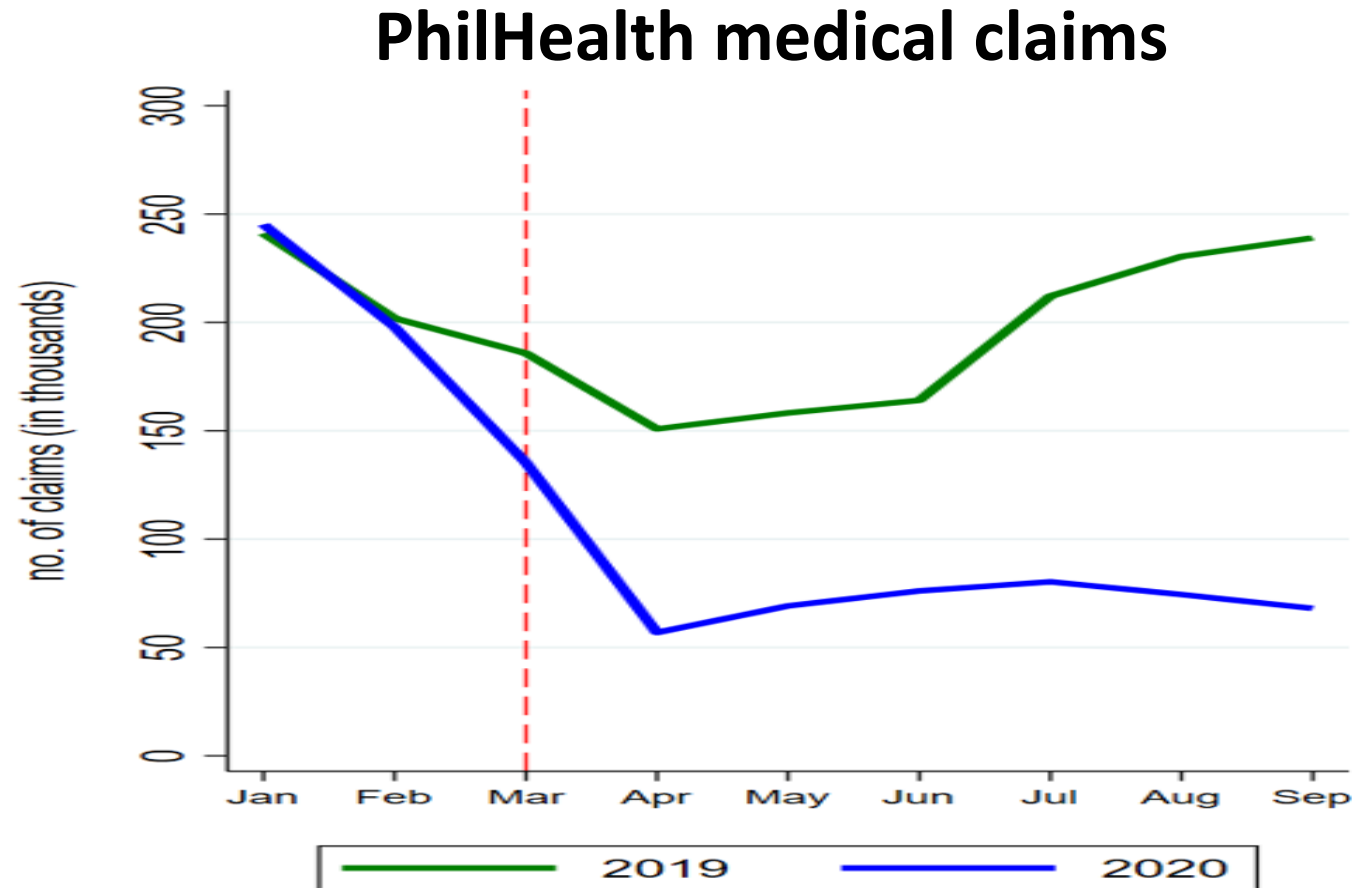
Health Home > Conditions and Diseases > What Is Coronavirus?



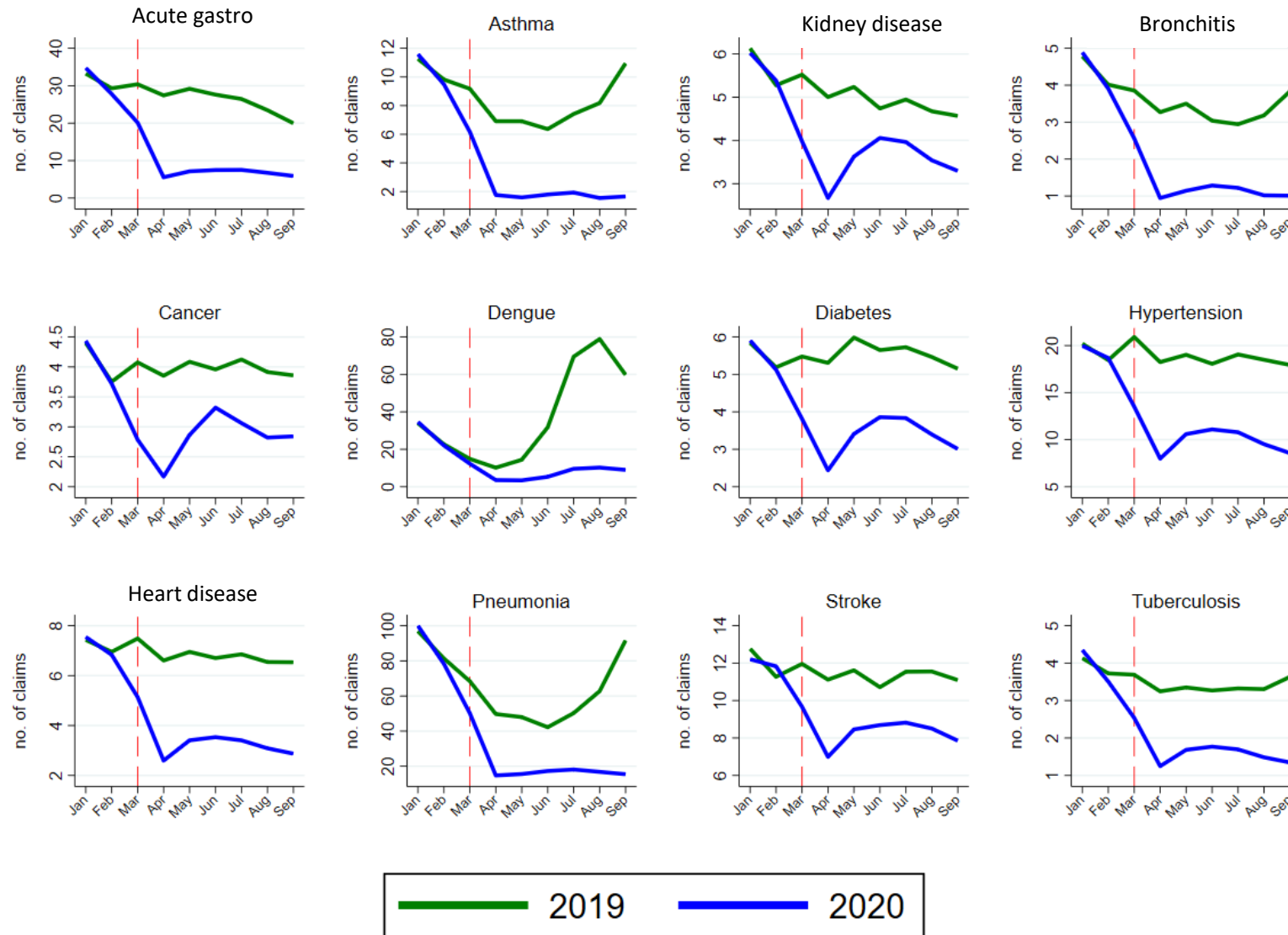
COVID 'Long Haulers': Long-Term Effects of COVID-19

According to the CDC, the **most common lasting symptoms** are **fatigue, shortness of breath, cough, joint pain, and chest pain.** Other issues include **cognitive problems, difficulty concentrating, depression, muscle pain, headache, rapid heartbeat, and intermittent fever.**

PhilHealth claims for high burden diseases such as cancer, diabetes, and hypertension have dropped by more than 75 percent during the pandemic. This means that majority of the people are deferring health treatment.



PhilHealth claims fell for 12 high burden diseases.



Majority or 53 percent of Filipino employees have felt a degree of mental health challenge during the pandemic.

The Filipino workforce is feeling stressed, worried, and anxious.

61% STRESSED 

53% WORRIED/
ANXIOUS 

34% DEPRESSED 

32% EMPTY 

The key challenges faced are:



Lack of focus and concentration



Having less pleasure in doing things normally enjoyed



Lower than usual self-confidence



Sleeping problems



Feeling down and sad

Sources: MindNation

Human capital losses: Forgone future wages and productivity due to COVID-19 and non-COVID-19 illnesses

- 1. The estimated total cost of COVID-19 and non-COVID-19 diseases is PHP 4.5 trillion over a 40 year period (the average working life of a person).**
2. Sources of losses in 2020:
 - a. COVID-19 expenditure that could have been spent somewhere else.
3. Sources of losses over the next 40-years:
 - a. Forgone wages from premature deaths.
 - b. Forgone wages from lost productivity due to COVID-19.
 - c. Forgone wages from lost productivity due to non-COVID-19 illnesses.
 - d. Additional medical expenses

Summary of losses: Forgone future wages and productivity due to COVID-19 and non-COVID-19 illnesses (in PHP billions)

	2020	Next 40 years	Total
Health	167	4,336	4,503
COVID-19	N/A	155	155
Non-COVID-19	N/A	4,181	4,181

Sources: PIDS and DOH

Summary of losses: Forgone future wages and productivity, and additional healthcare costs due to COVID-19 and non-COVID-19 illnesses

	Directly affected	Equivalent years of life lost	Lifetime wage forgone/ healthcare cost (in PHP billions)
Total	5,446,704	6,694,687	4,336
Forgone wages from premature deaths	113,541	1,371,462	493
COVID-19 deaths	21,543	284,863	94
Non-COVID-19 deaths from lack of healthcare	91,998	1,086,599	398
Forgone wages from disability/lost productivity	5,333,163	5,323,235	1,952
COVID-19 long-term effect	9,928	164,390	60
Non-COVID-19 from lack of healthcare		5,158,845	1,891
Additional healthcare costs associated with the various diseases	5,323,235	N/A	1,892

Source: PIDS and DOH

Summary and recommendations

Key findings

The long-run total cost of COVID-19 and the quarantines to present and future society is estimated at **PHP 41.4 trillion** (in NPV terms).

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Sources: PSA, NEDA, PIDS, ADB, and WB

Note: the NPV of nominal GDP in the next 10 years is PHP 205 trillion. Physical capital horizon is 10 years given convergence period while human capital horizon is 40 years (i.e., productive years of a person, age 22 to 65).

Recommendations

1. Ensure strong recovery in 2021 and 2022 with growth rates of 4-5 percent and 7-9 percent, respectively by:
 - a. **Accelerating vaccination** of all adult Filipinos to reach 70 million by end-2021 by expanding vaccination sites, including work sites, removing artificial barriers, and using technology to reduce the wait and processing time.
 - b. **Managing risks better**, opening the economy safely, allowing selected family activities to resume, allowing limited face-to-face schooling, and imposing localized lockdowns in highest risk areas, which is currently being piloted in NCR.
Remember: the most restrictive community quarantines only postpone the surge. What will reduce the surge is the PDITR.
 - c. **Implementing the recovery program**, in particular the timely use of the 2021 budget, and reprioritizing the budget to the most important programs.
2. Work with congress to refine the 2022 budget allocation and future budgets to address deficiencies in investments in physical and human capital to close the gap faster.