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Potential Economic Effects of Lockdown in the Philippines due to COVID-19: Lessening the Impact on Poor Households

The spread of novel coronavirus (COVID-19) is like a wildfire. It started when a first case was detected in Wuhan, China on December 12, 2019. As of March 31, 2020, the pandemic COVID-19 has infected 205 countries with 803,614 confirmed cases, 39,048 confirmed deaths, and 172,443 recovered (Dong et al, 2020). In the Philippines, there are 2,084 confirmed cases, of which 49 recovered and 88 died. The vaccine to cure or stop the spread of COVID-19 is still a work in progress. Experts have indicated it would take more than a year to develop and test a vaccine to control COVID-19. In the meantime, the health care system of countries infected by COVID-19 cannot cope up with the speed at which COVID-19 is spreading. This brief presents the results of six simulations on the impacts of the Philippine government's policy and response to the pandemic and corresponding recommendations.

Policy Recommendations

1) Labor conditions affecting labor efficiency should be quickly restored as part of the rebuilding. Providing direct income support and targeting the support to vulnerable labor groups in critical sectors should be priority. One such support can be channeled through the 4Ps. The government's plan to give additional support to the 4Ps beneficiaries by PhP 5,000 to PhP 8,000 is in the right direction.

2) If the lockdown will be further extended to 3 months, government will have to provide additional support of PhP 70 billion to reverse the change in all poverty indicators. The initial support provided by government will have to be increased correspondingly, if the lockdown will be extended. In the event of nationwide lockdown, priority should be given to the worst hit sectors such as the crops, textile-garments and construction.

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Introduction

To control the spread, countries have imposed physical distancing, discouraged social gatherings, encouraged 'shelter-in-place' or 'stay-at-home', work-at-home or teleworking, and perform hand hygiene and disinfection. Some developed countries have aggressively implemented measures to test, trace, isolate, and treat COVID-19 patients to prevent community transmission and avoid severe economic costs in their countries. In the Philippines, the government has imposed an enhanced community quarantine (ECQ) in the entire Luzon. The government has also implemented very limited mobility with curfew hours between 8 pm and 5 am, while employees are instructed to work at home. Travel restrictions within and across municipalities are strictly enforced. The ECQ or total lockdown has forced establishments to temporarily close, and airports stopped its commercial operations. This lockdown intervention, which is expected to "flatten the curve", was implemented from March 13 to April 14, 2020.

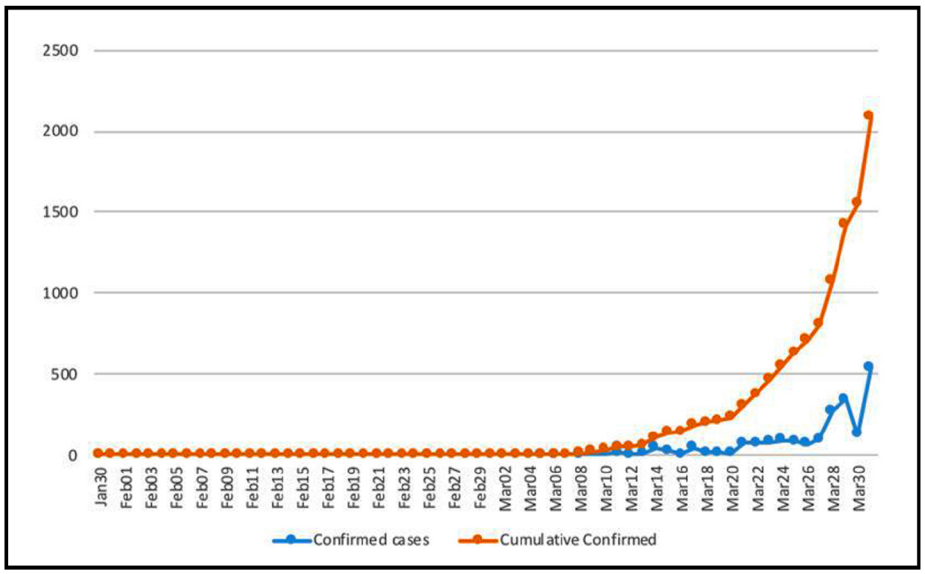

Figure 1. COVID-19 Confirmed Cases in the Philippines as of March 31, 2020.

Source: Department of Health (2020).

This short note presents estimates of the potential economic effects of the lockdown in the Philippines for one month, and up to three months should the government decide to extend the ECQ. The note will also present possible policy interventions/recommendations on how to lessen or minimize the effects on vulnerable groups of the society.

Economic Impacts of Government Lockdown Policy

The analysis on this note is based on simulation results generated using the Philippine computable general equilibrium model calibrated to 2018 social accounting matrix. The paper also uses a Philippine poverty micro-simulated model to estimate effects on poverty.

There are six scenarios presented in the note:

1. Lockdown coverage: the entire Luzon for
    - 1a. 1 month
    - 1b. 2 months
    - 1c. 3 months

2. Lockdown coverage: All Philippines for
    - 2a. 1 month
    - 2b. 2 months
    - 2c. 3 months

The temporary lockdown in the country is expected to last for 1 month, but in Wuhan, China, the spread of COVID-19 was put under control only after 3 months. Thus, the analysis in the note covers lockdown scenarios that last for 1 to 3 months, and compared to the baseline without lockdown, i.e., one full year of no disruptions. The model was simulated by reducing the labor efficiency parameter in the model using the following adjustments: (a) number of months of lockdown (11/12 if lockdown lasts for one month, 10/12 for 2 months and 9/12 for 3 months); and (b) share of Luzon (70 percent of total Philippine GDP) if lockdown covers Luzon only, 100 percent otherwise [1]. These scenarios capture lockdown factors affecting labor efficiency such as labor conditions and conditions of the country during these times. The reductions in labor efficiencies will result in corresponding reduction in outputs. Among the factors affecting labor conditions under the lockdown are the changed factory environment with reduced flow of raw materials which will reduce operating hours, shortened working hours or even shutdown of operation for some sectors, and irregularity of wages and methods and system of wage payment. The lockdown will also affect social conditions in Luzon and the rest of the

country. The policy response of the government will also affect labor efficiency.

The following scenarios use the projected growth in 2020, which is 6 percent growth over 2019 as the base. The projected real GDP in 2020 is PhP 10.34 trillion in 2000 prices.

Luzon Lockdown for 3 Months. Under the Luzon lockdown for straight 3 months, real GDP contracts by PhP 551 billion relative to the 2020 base (Table 1). Instead of the 6 percent projected growth, the country will only grow by 0.4 percent in 2020 over 2019. Note that Luzon contributes 70% of total GDP. The sectors with the largest negative impact are computer and related activities, textile and related activities (spinning, weaving, texturing and finishing), construction, and agriculture crops, and motor vehicle.

The government budget gap (deficit) increases from 3.2 percent of GDP at the base to 3.4 percent. The increase in the deficit is largely due to slightly faster reduction in government revenue than GDP. The lockdown will also prices by 5.8 percent.

Poverty increases as indicated by the three poverty indices (P0 poverty incidence, P1 poverty gap and P2 poverty severity). Income inequality also increases. However, in terms of percentage changes of the poverty indices relative to the base, the results indicate that the poorest group suffers the most as indicted by P2 increasing by 1.8 percent, which is higher than the increase in P0 and P1. [2]

Luzon Lockdown for 2 Months. If the lockdown lasts for 2 months, the negative effects are relatively lower. The 6 percent projected growth in 2020 will be trimmed down to 2.3 percent. The sectoral effects are also smaller. The poverty and income inequality effects are also smaller.

Luzon Lockdown for 1 Month. If the intervention lasts for a month, the effects are much lower. The projected GDP growth of 6 percent will be reduced to 4.2 percent. The poverty effects are also smaller.

Entire Philippine Lockdown for 3 Months. The largest negative effects will be realized if the lockdown covers the entire Philippine and would last for 3 months. The economy contracts by PhP 817 billion relative to the 2020 projected level. Relative to the 2019 GDP, the economy contacts by 2.4 percent. There are 8 sectors, which will contract by double digit. The government budget gap (deficit) increases to 3.5 percent, while prices increase by 8.8 percent. The impact on the poorest group is the largest under this scenario. Income inequality also deteriorates.

[1] For example, if the lockdown lasts for 3 months, the labor efficiency parameter is reduced from 1 to 0.75 (i.e. 9/12, where 9 represents 12 months less 3 months of lockdown). This factor is further adjusted if the coverage of the lockdown is only in Luzon, where Luzon captures 70 percent of the country's GDP. That is, 1-(1-0.3)*(3/12)=0.825. Therefore, the adjustment factor is smaller (0.825) if the coverage is Luzon only, compared to 0.75 if the coverage is the entire Philippines.

[2] P0 is the poverty headcount ratio or count of households or individuals with incomes falling below the poverty line; P1 is the poverty gap which measures the intensity of poverty or the distance of poor households from the poverty line; P2 is the poverty severity index which captures the degree of inequality among the poor.

Table 1
Potential Economic Effects of Lockdown due to COVID-19

		Lockdown coverage: Luzon			Lockdown coverage: All Philippines		
		Months COVID 19 is put under control			Months COVID 19 is put under control		
		3	2	1	3	2	1
Real GDP, % change relative to base		-5.3	-3.5	-1.7	-7.9	-5.1	-2.4
Change in Real GDP Relative							
Projected 2020 Real GDP, PhPbillion	10,336*	-551	-357	-174	-817	-522	-251
Projected 2020 Growth in Real GDP		0.4	2.3	4.2	-2.4	0.6	3.4
Sectors, % change relative to base							
Crops		-8.6	-5.6	-2.8	-12.7	-8.2	-4.0
Coconut & sugar		-6.3	-4.1	-2.0	-9.3	-6.0	-2.9
Other agriculture		-6.9	-4.5	-2.2	-10.1	-6.5	-3.1
Other mining		-4.5	-2.9	-1.4	-6.8	-4.3	-2.1
Fossil		-2.0	-1.3	-0.6	-3.0	-1.9	-0.9
Food manufactures		-4.7	-3.0	-1.5	-7.0	-4.5	-2.1
Textile & leather		-10.1	-6.6	-3.3	-14.8	-9.6	-4.7
Wood and products		-7.5	-4.9	-2.4	-11.1	-7.1	-3.4
Chemicals plastics		-6.0	-3.9	-1.9	-8.9	-5.7	-2.7
Metals & non metal		-5.0	-3.3	-1.6	-7.5	-4.8	-2.3
Mach and elec. Equip.		-5.4	-3.5	-1.7	-8.0	-5.1	-2.4
Electrical		-5.8	-3.8	-1.8	-8.6	-5.5	-2.6
Semi-conductor		-5.5	-3.6	-1.7	-8.2	-5.2	-2.5
Motor vehicle		-7.9	-5.2	-2.5	-11.7	-7.5	-3.6
Other manufactures		-8.4	-5.5	-2.7	-12.3	-7.9	-3.9
Non fossil		-2.0	-1.3	-0.6	-3.0	-1.9	-0.9
Construction		-9.5	-6.2	-3.0	-14.0	-9.0	-4.4
Electricity		-2.6	-1.7	-0.8	-3.9	-2.4	-1.2
Water		-5.5	-3.5	-1.7	-8.1	-5.2	-2.5
Transportation		-5.2	-3.4	-1.6	-7.7	-4.9	-2.4
Trade		-5.2	-3.3	-1.6	-7.7	-4.9	-2.3
Real estate		-3.4	-2.2	-1.0	-5.0	-3.2	-1.5
Computer & related		-10.0	-6.5	-3.2	-14.7	-9.5	-4.6
Other services		-4.3	-2.8	-1.4	-6.4	-4.1	-2.0
Public Administration		-2.0	-1.3	-0.6	-2.9	-1.9	-0.9
Government Budget/GDP, %	-3.2	-3.4	-3.3	-3.3	-3.5	-3.4	-3.3
Price increase, %		5.8	3.7	1.8	8.8	5.5	2.5
Poverty & Distribution	Base**						
P0, %	21.503	21.799	21.690	21.574	21.911	21.778	21.614
P1, %	5.578	5.657	5.628	5.602	5.697	5.652	5.612
P2, %	2.080	2.117	2.103	2.091	2.135	2.114	2.096
GINI Coefficient	0.4530	0.4534	0.4533	0.4531	0.4537	0.4534	0.4532
Percent change relative to base, %							
P0		1.4	0.9	0.3	1.9	1.3	0.5
P1		1.4	0.9	0.4	2.1	1.3	0.6
P2		1.8	1.1	0.5	2.7	1.7	0.8
GINI Coefficient		0.10	0.06	0.03	0.15	0.09	0.04

Source: Authors' calculations.
* 2020 real GDP is 6% higher than 2019 real GDP
** Based on 2015 Family Income and Expenditure Survey (FIES). The 2018 FIES is still unavailable.

On the other hand, if the lockdown covers Luzon only and would also last for 3 months, the additional government budgetary requirement to expand 4Ps is relatively smaller at PhP 55.98 billion (Table 2). The amount reverses all the negative poverty effects of the lockdown. The results are also progressive with the poorest households benefiting the most.

Table 2
Impacts of Expanding 4Ps Under the Three Months Lockdown

	Lockdown Coverage:	
	Philippines	Luzon
Government Budget Deficit/GDP, %	-3.646	-3.476
Government budget required, Php billion	-69.72	-55.98
Price increase, %	9.2	6.0
Poverty Effects:		
P0	21.191	21.212
P1	5.454	5.456
P2	2.024	2.024
GINI Coefficient	0.45116	0.45140
Percent change relative to base, %		
P0	-1.45	-1.35
P1	-2.22	-2.18
P2	-2.69	-2.68
GINI Coefficient	-0.40	-0.35

Assuming COVID-19 is temporary and its spread can be controlled by the lockdown, these costs can easily be absorbed by the robust growth of economy once the aggressive infrastructure program of the government resumes. If growth resumes, the output scale effect of the recovery will easily dominate the price effects, i.e. price increases can stabilize very quickly.

Conclusions and Recommendations

The results indicate the poorest household groups are the most vulnerable to the COVID-19 spread. However, these effects can be reversed by government intervention through direct income support targeted to these groups. For example, the current poverty program, the Pantawid Pamilyang Pilipino Program (4Ps), can be expanded by government additional budget. Table 2 indicates the government budgetary costs to reverse the poverty effects of COVID-19.

If the lockdown covers the entire Philippines and would last for 3 months, additional Php 70 billion is required to reverse the change in all poverty indicators. The poverty effects are progressive in the sense that the poorest group, as indicated by P2, has the highest poverty reduction. However, this additional budget increases the deficit gap/GDP to -3.65 percent and prices by 9.2 percent. These effects can be mitigated with the most recent launching of the "nation's largest and widest social protection program", amounting to Php200 billion. This amount could cover for the provision emergency assistance to the vulnerable sectors badly affected by the impact of COVID-19 pandemic, including support for the improvement of the health facilities and health service delivery of the country.

References

Dong, E., Du, H., Gardner, L. (2020). *An interactive web-based dashboard to track COVID-19 in real time. Lancet Infect Dis;* published online Feb 19. https://doi.org/10.1016/S1473-3099(20)30120-1.

Department of Health (2020). *COVID-19 Case Tracker.* Accessed from https://www.doh.gov.ph/2019-nCoV

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