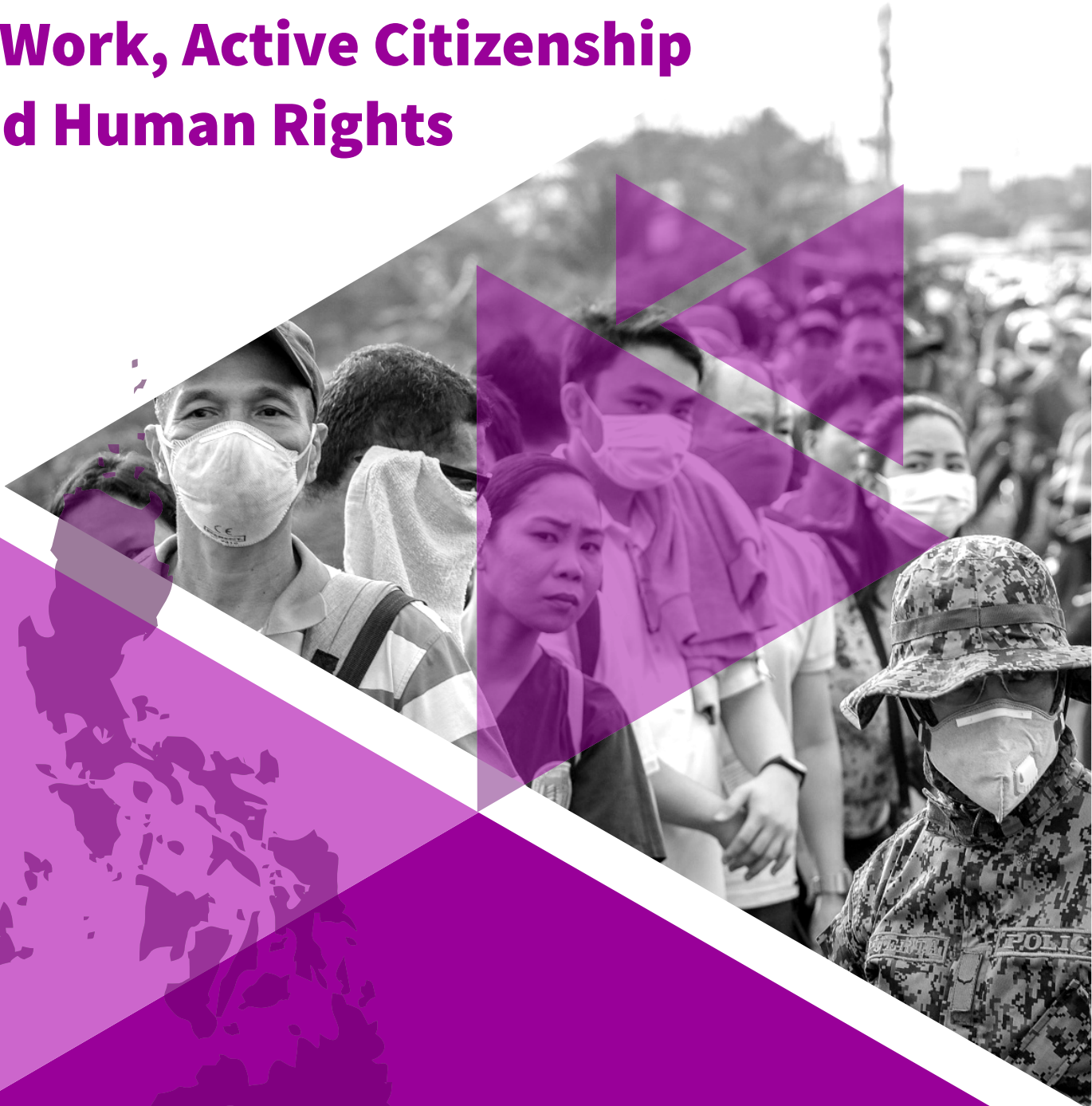


Life After the Pandemic: Facing the New Normal in Work, Active Citizenship and Human Rights



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Life after the pandemic: Pursuing economic recovery through labor protection

CJ Castillo and Marjorie Muyrong

I. Introduction

The pandemic had revealed that economic growth is tightly linked with jobs. When the economies of the world contracted as a result of the lockdowns, job crises across countries also ensued. The International Labor Organization (2020) estimated that working-hour losses equate to 495 million full-time equivalent jobs around the world in the second quarter of 2020. But the reverse is also true. When people were prevented from going to work because of the lockdown, the economy contracted. Work is, after all, what *creates* the economy. To stimulate the economy, policies must enable work. In other words, policies must be assessed in terms of whether they are able to allow workers to create value in the economy—that workers are productive.

a. Overview of COVID impacts on labor

In the old normal, much of people's day-to-day living depends on the economy through the relationships between households and firms. On the one hand, households depend on business enterprises for its needs and wants as well as for their source of livelihood. On the other hand, however, firms rely on households as well. Business enterprises would need to households to buy the goods and services they produce to earn revenues. In the same way, business enterprises also depend on households for workers to employ.

However, labor markets across the world are fraught with long-standing issues that had made the impacts of COVID-19 on the labor sector more intense compared to others. More specifically, American economist Heather Boushey (2020) explains that the long-standing low income levels among wage workers had resulted in low to zero savings that now disable them to protect themselves

from the economic impacts of COVID-19. In the Philippines, the labor sector has also been struggling with sharing in the gains of economic growth. In the persistence of these weak labor outcomes, Filipinos workers have not been able themselves and their families when the pandemic struck.

In this case, current policies said to aid labor recovery must be assessed. In this paper, *ex ante* analysis through computable general equilibrium (CGE) model shows that fiscal policies which are traditionally viewed as helpful (i.e., tax cuts) in stimulating the economy have negligible effects on economic growth. On the other hand, policies such as wage subsidy, which is being left out in current recovery discourse and dismissed as dole outs or “manna from heaven” are the types of policies that stimulate economic growth and economic recovery, albeit also resulting in marked reduction in government revenues. However, in the midst of the COVID recession that threatens hysteresis¹, debt-financed expansionary policy seems warranted (Delong and Summers 2012).

b. Research problem and objectives

What are the impacts of COVID-19 on the labor sector and how these further impacts the economy? What is the efficacy of various policy responses to help recovery of both the labor sector and the economy? With these research questions, the objectives of the current study are the following:

- Narrate the impacts of COVID-19 to the labor sector and the economy,
- Measure the economic effects of COVID-19 impacts on the economy through an ex-ante analysis,
- Trace the potential mechanisms of economic recovery of various policy responses for the labor sector, and
- Measures the impacts of these policy responses to economic variables through an ex-ante analysis.

¹ Delong and Summers (2012, 234) define hysteresis as the case where “cyclical outputs shortfalls affect the economy's future potential”. While difficult to measure, they say that hysteresis manifests in various mechanisms such as weaker labor force attachment, younger workers unable to find employment, reduced physical and human capital investments, reduced innovations, and even changes in the behavior of firm managers.

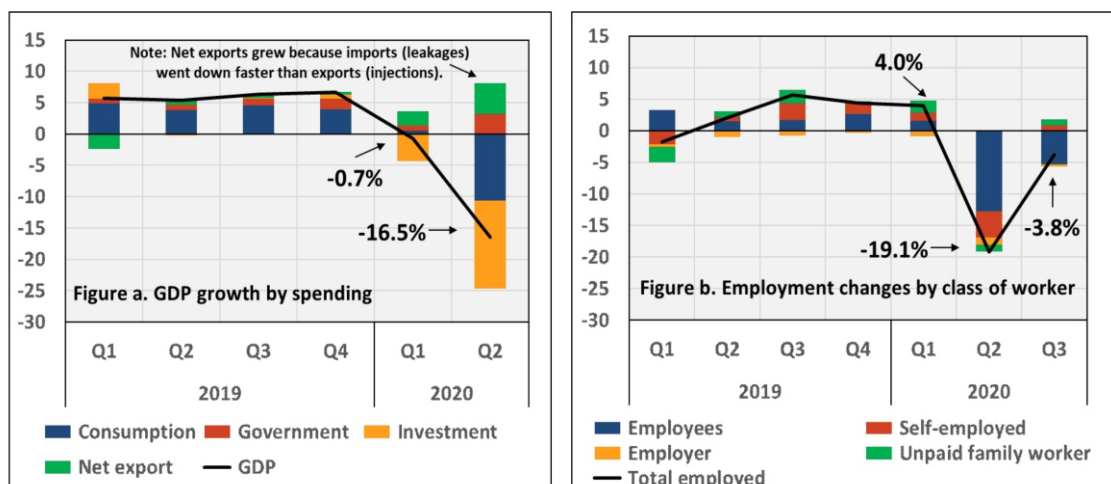
II. Socio-economic impacts of COVID-19

How do we understand the impacts of COVID-19 to the labor sector? The impacts on workers lie on the limited ability in taking part in value creation, i.e. the transformation of raw materials into new goods or services as the result of limited mobility. Reduced value creation means lower economic activity which in turn reduces the income received by workers. However, with lower incomes, households are forced to reduce their spending as well. The economy-wide reduction in work is the cause of the economic recession experienced in the second quarter of 2020 with 13 million workers have been displaced by the enhanced community quarantine (ECQ) according to the April 2019 Labor Force Survey (LFS).

a. COVID recession in the Philippines

As a result of the lockdown that started mid-March, it has been expected that economic activity would have declined substantially. The second quarter estimates from the Philippine Statistics Authority (PSA) reports a negative 16.5% gross domestic product (GDP) growth second quarter of 2020 compared to last year (*Figure 1a*). Expectedly, this significant decline in economic activity is matched with a decline in the number of employed workers by 19.1% in the same period (*Figure 1b*).

Figure 1. Changes in output and labor in the Philippines, 2019-2020



Source of basic data: Philippine Statistics Authority

Furthermore, *Figure 1b* also shows that while there was a decline in salary and wage employment in April 2020, self-employment grew more in July 2020. At the same time, underemployment is now higher by 1.3 million in July 2020 compared to the same period last year. This coincidence of increased self-employment and underemployment suggests that poor Filipinos indeed cannot afford to be unemployed, albeit they are underemployed (de Dios and Dinglasan 2015). This aligns with the survey conducted by Zero Extreme Poverty Philippines 2030 and the United Nations Development Programme (2020) among 3,144 poor and near-poor families from Metro Manila and Cebu. The survey found that 68% of the households reported that they try to cope with the lower incomes they were experiencing with the top measure being attempts to find additional work.

b. Changes in output and employment across the sectors

Looking at the breakdown of GDP growth from the industrial origin approach as shown in *Table 1*, on the other hand, reveals the COVID recession comes marked decline in economic activity in the industry and services sectors. The table shows that industry's gross value added (GVA)—its contribution to the GDP—is declined by 22.9% in the second quarter of 2020 compared to last year. On the other hand, the GVA of the services sector decreased by 15.8%.

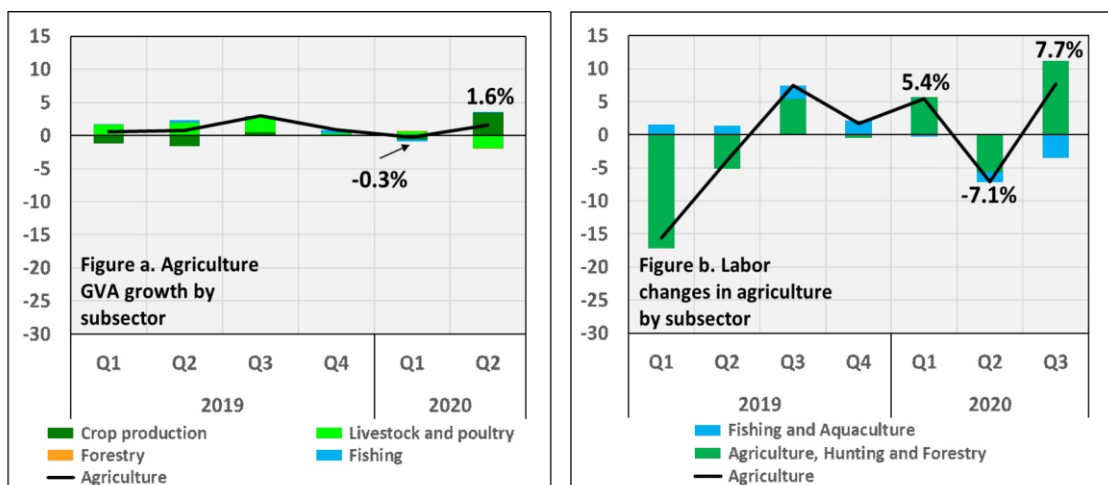
Table 1. Breakdown of GDP Growth by Industrial Origin Approach, 2020

GDP by Industrial Origin Approach	Gross value added (2018 prices, in millions)				Year-on-year growth rate (%)	
	2019 Q1	2019 Q2	2020 Q1	2020 Q2	2020 Q1	2020 Q2
Agriculture	440,880	409,818	439,734	416,402	- 0.26	1.61
Industry	1,370,256	1,493,273	1,324,022	1,151,788	- 3.37	- 22.87
Services	2,646,495	3,071,640	2,662,284	2,586,640	0.60	- 15.79
GDP	4,457,631	4,974,731	4,426,040	4,154,830	- 0.71	- 16.48

Source: Philippine Statistics Authority

A source of growth in the second quarter of 2020 is recorded by agriculture with its GVA increasing by compared to last year, albeit slightly by 1.6%. However, employment in agriculture as shown by *Figure 2b* actually experienced a significant reduction in labor at 7.1% in April 2020, although it has already shown improvement in July 2020. This actually provides a positive outlook for the GVA of agriculture in the third quarter of 2020.

Figure 2. Changes in output and labor in Philippine agriculture, 2019-2020



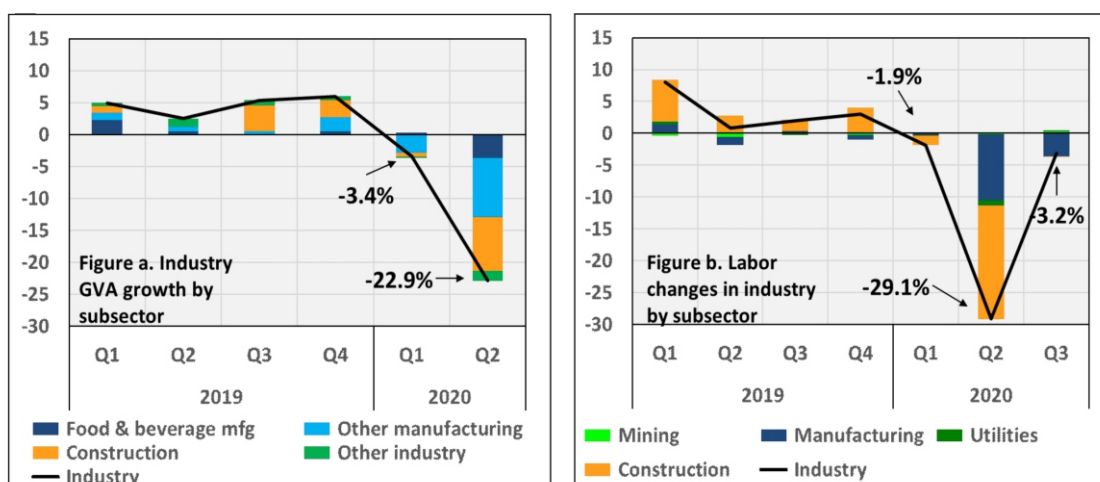
Source of basic data: Philippine Statistics Authority

Which economic subsectors have shown to be more affected by COVID-19? *Figure 3a* also shows that the larger decline in both output and employment among the industrial sectors were experienced by manufacturing and in construction sectors. While industry declined by 22.9% in the second quarter of 2020, the April 2020 LFS shows an even bigger decline in the magnitude of employed industrial workers at 29.1% lower employment compared to the same period last year. Fortunately, as the government moved to reopen the economy, the latest July 2020 LFS shows that the decrease in employment in industry compared to July 2019 is much smaller. The data suggests that workers are now back in factories as well as in construction sites. However, there seems to be real estate projects that have been put on hold indefinitely thereby still displacing a significant number of construction workers.

Like industry, the services also experienced a substantial decline in both output by 15.8% and in employment by 22% in the second quarters of 2020 compared to the same period last year. The figure further shows that it is wholesale and retail

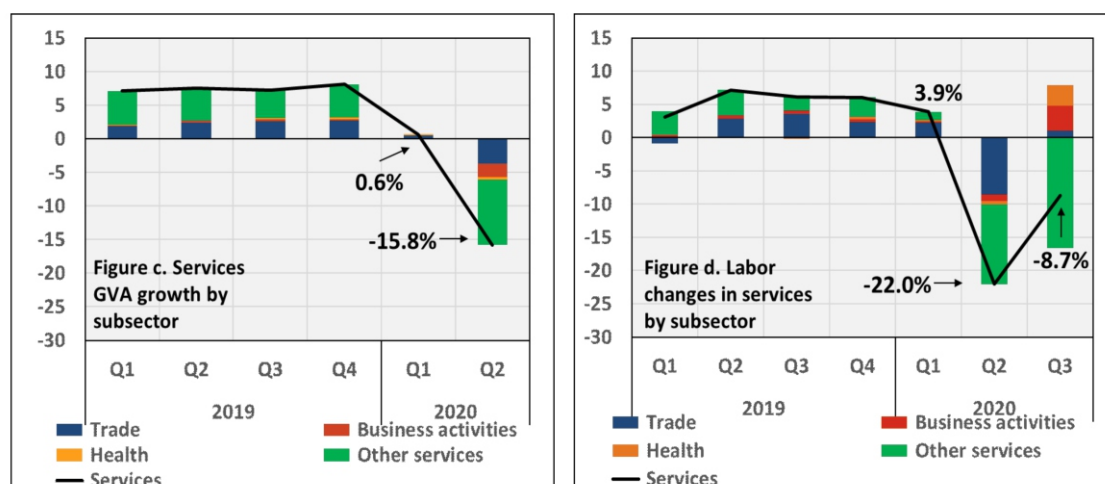
trade and other services (e.g. salons, barbershops, and recreational activities) that were most affected by the lockdowns. In July 2020, the LFS had shown improvement except in the case of workers in other services.

Figure 3. Changes in output and labor in Philippine industry, 2019-2020



Source of basic data: Philippine Statistics Authority

Figure 4. Changes in output and labor in Philippine services, 2019-2020



Source of basic data: Philippine Statistics Authority

c. Policy responses to the COVID-19 recession

In response to the economic slowdown resulting from the mandated community quarantine across the country, the Philippine government provided a set of cash assistance to various segments of the labor sector. The Department of Labor and Employment (DOLE) rolled out support to the affected workers through its

Employment (DOLE) rolled out support to the affected workers through its Tulong Panghanapbuhay sa Ating Disadvantage/Displaced Workers (TUPAD) which provides emergency employment for displaced, under employed and seasonal workers. Through TUPAD, DOLE offered 10-day barangay-based jobs involving community disinfection that would pay Php 10,000 to informal workers displaced by the community quarantine. DOLE also provided a one-time Php 5000-peso cash assistance to formal sector workers in private establishments whose employers implemented either flexible work arrangements or temporary closure through the COVID-19 Adjustment Measure Program (CAMP). Finally, DOLE also extended financial support to returning OFW workers who lost their employment abroad providing them a one-time Php 10,000 cash assistance through its AKAP program. However, as of August 2020, returning OFWs reached more than 170,000 persons while the total number of requests for aid had reached more than 600,000 including those still abroad. Finally, the Department of Social Welfare and Development (DSWD) had also provided a transfer to households through the Emergency Subsidy Program – Social Amelioration Program (ESP-SAP). The amount of transfer varies according to the prevailing minimum wage in a region. *Table 2* lists these policies, their reported budget and beneficiaries.

Table 2. Cash assistance programs in response to labor displacement from COVID-19

Agency	Cash subsidy	Budget	Beneficiaries (number of people)
DOLE	TUPAD	Php 180 million	18,000 ²
	CAMP	Php 1.3 billion	250,000 ³
	AKAP	Php 5 billion	617,431 ⁴
DSWD	ESP-SAP	Php 100 billion	17,741,405 ⁵

Note: Reported number of beneficiaries for DOLE -AKAP is the number of total aid requests received by DOLE and OWWA (as of August 29, 2020) including those who have not yet returned home.

Source: DOLE, FASSSTER

² <https://www.dole.gov.ph/news/statement-of-secretary-silvestre-h-bello-iii-on-assistance-to-workers-amid-covid-19/>

³ <https://www.dole.gov.ph/news/statement-of-secretary-silvestre-h-bello-iii-on-assistance-to-workers-amid-covid-19/>

⁴ <https://www.dole.gov.ph/news/ofw-returnees-top-170k-more-to-benefit-from-akap/>

⁵ Update is available from FASSSTER portal. The portal reports that 98.37% of target recipients had been reached.

With 13 million workers estimated to have been displaced from the April 2020 round of LFS and the July 2020 LFS revealing increased self-employment and higher underemployment, this suggests that what workers must not be earning enough from self-employment (Castillo and Muyrong 2020). Hence, these cash assistance programs need to be assessed not only in terms of their delivery but also in terms of their contributions to economic recovery. With that said, since employment is closely linked to output and the threat of hysteresis from the recession potentially leading to extended economic decline and elevated unemployment, expansionary fiscal policy, as a whole, must be assessed.

Earlier, in June 2020, a group of economists from various universities in the Philippines expressed their opposition to the Corporate Recovery and Tax Incentives for Enterprises (CREATE) bill in its May 2020 version. In the statement, Fabella, et al. (2020)⁶ deem the CREATE bill for being inefficient and non-inclusive. CREATE, which seeks to immediately reduce the corporate income tax rate (CITR) from 30% to 25% by July 31, 2020⁷, is also deemed detrimental to government tax effort in the midst of shrinking tax collection due to the COVID recession. Instead, they call on the government to make the policy response inclusive of smaller businesses by supporting instead the Accelerated Recovery and Investment Stimulus for the Economy (ARISE) bill. They maintain that additional funds need to be earmarked for struggling MSMEs and additional cash transfers should still be provided to vulnerable workers and families alongside food aid and unemployment insurance, among others. *Table 3* lists the breakdown of the budget of the ARISE bill.

Table 3. Breakdown of ARISE bill budget (million pesos)

	Total	2020	2021	2022
ARISE Philippines	1,380			
Mass testing	20	10	10	
Wage subsidy for 2 months	110	110		
Cash-for-work	30	30		
Educational subsidy	42	42		
MSME loans (SBC)	75	50	25	
SME and agrifishery loans	50	50		

⁶The names of the 24 economists were published in <https://business.inquirer.net/298964/economists-buck-inequitable-inefficient-create-bill>.

⁷This contrasts to the gradual reduction of CITR over 10-year period under the previous version of the bill, the Corporate Income Tax and Incentives Rationalization Act (CITIRA).

Loan guarantee program (PGC)	40	20	20	
MSME loans (DTI)	10	10		
Tourism industry assistance (DOT)	58	58		
Transportation assistance (DOTr)	70	70		
BOI	44	44		
Cash-for-work for agriculture	15	15		
Balik Probinsya, Bagong Pagsasa Program	66	66		
NIEV	100	150		
BBB+	650	130	260	260

Source: Authors' compilations from news reports

The policy debates therefore align with similar debates in past crises such as the 2008 Global Recession. In the United States, for instance, Keynesian economists call for government spending as the more effective fiscal expansionary policy compared to tax breaks. Eggertsson (2009) explain that tax cuts could actually deepen recession if it would not lead to beneficiaries spending more. Hence, government spending is better. However, the initial policy response of the Bush administration were income tax cuts. Shapiro and Slemrod (2009), in a rider survey to a consumer survey that seeks to gauge the response of consumers from income tax breaks, show that only 20% of respondents said that they would spend the income tax rebate. On other hand, almost half said that they would use the money to pay debts while around 30% said they would save the money.

After all, according to Delong and Summers (2012), fiscal expansion could be self-financing during crises given the correct set of conditions. Furthermore, they demonstrated that, even when economic growth cannot pay off debt-financed fiscal spending, it remains beneficial to the economic to pursue expansionary policy in the context of hysteresis. In other words, if people would benefit from having to prevent extended economic decline and unemployment even after the recession had passed in the future, then it makes sense to stimulate the economy in the present period.

As famed American economist Paul Krugman (2015) explains, “Since the global turn to austerity in 2010, every country that introduced significant austerity has seen its economy suffer, with the depth of the suffering closely related to the harshness of the austerity.” Unlike other countries who tightened their belts following the 2008 Global Recession, the United States, under the Obama Administration, focused on enlarging fiscal stimulus through the American

Recovery and Reinvestment Act (ARRA) signed on February 17, 2009 (United States Congress 2009). While the act is estimated to have USD 787 billion in fiscal deficits until 2019, it ensured that the fiscal policies were targeted to enable productive activities of small businesses. For instance, large tax cuts were made available for the purchase of machinery and equipment, but tax cuts for SUVs were maintained at low levels. Moreover, while a third of the budget were earmarked for tax cuts, another third was allocated for extended unemployment benefits and social services, and another third for grants and loans.

Amidst this policy debate however is the perceived inability of long-run models to predict short-run outcomes. Moreover, the current situation differs from the 2008 Global Recession as the current recession is brought about by the COVID-19 pandemic. In this case, policy discourse towards economic recovery and labor protection must benefit from alternative analyses. One such analysis is the CGE model. While usually used to simulate shocks from trade, CGE analyses has also been used in assessment of fiscal policy. For instance, Bajo-Rubio and Gomez-Plana (2015) show that the increase in income taxes compared to spending cuts result in bigger contractionary effects on GDP and on employment. On the other hand, the opposite result is demonstrated if we compare spending cuts with increases in indirect taxes. The Philippine case, therefore, presents an opposite simulation requirement as the policy debates currently look at government spending vis-à-vis corporate tax cuts to help the economy recover.

With National Economic and Development Authority (NEDA) chief Karl Kendrick Chua conceding that a bigger fiscal stimulus would have helped the economy recover faster in the third quarter of 2020⁸, the succeeding analysis offers simulations of alternative policies that the government must consider as we continue to seek economic recovery. In these set of simulations, the paper demonstrates that labor protection through wage subsidies compared to household subsidies demonstrate greatest recovery, albeit its significant impacts of government revenues. On the other hand, while household transfers have almost negligible impact on GDP growth, they nevertheless mitigate the impact of the crisis on households especially the poor. Meanwhile, corporate income tax cuts have no impacts on GDP growth.

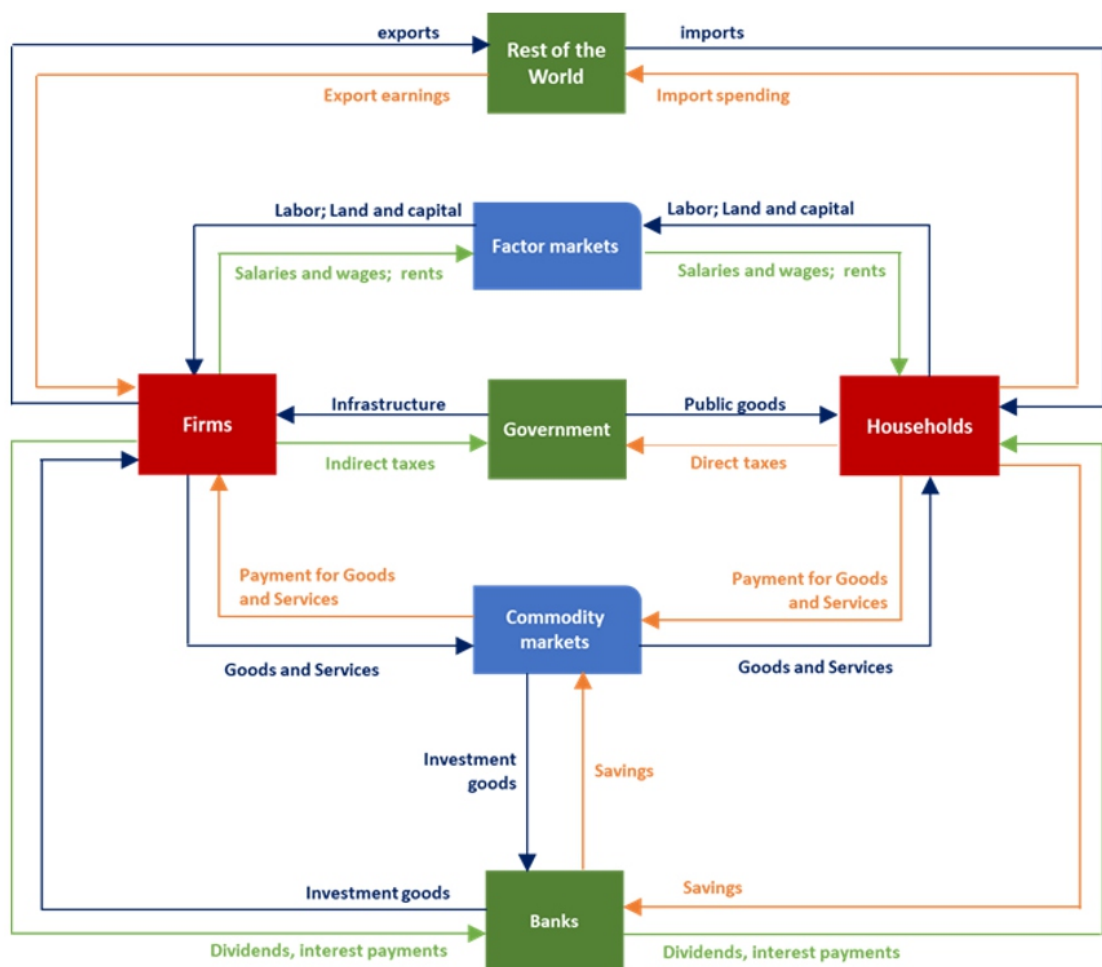
⁸ See report in Business Mirror at <https://businessmirror.com.ph/2020/11/17/ramped-up-govt-spending-could-have-blunted-q3-contraction/>.

III. Method

a. CGE model

A CGE model is a quantitative analytical tool commonly used to simulate the impact of economic shocks. The model is a mathematical representation of how the economy works based on economic theory: households maximize utility for a given level of income, and firms maximize profits based on their production capacity. Households earn income in the form of wages and rents from supplying labor and capital in factor markets. Meanwhile, firms supply goods and services to commodity markets where consumers buy at a given level of price. Government provides public goods and infrastructure while collecting taxes. These transactions, which make up the economy, is summarized in *Figure 5*.

Figure 5. Circular flow diagram

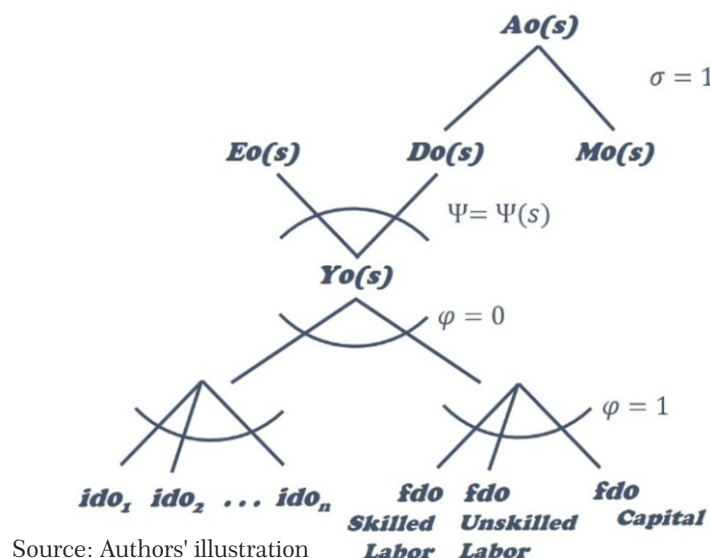


Source: Authors' illustration

One of the advantages of CGE models over partial equilibrium models is its ability to capture secondary effects of economic shocks. The interconnection of consumption and production activities in a CGE model ensures that the full effect of a shock is captured. For instance, in the case of COVID-19 pandemic, a shock such as the lockdown directly impacts production activities of firms as well as the income of households. However, the total impact of the lockdown on the economy is not only captured by lost productivity of economic activities whose workforce force was prevented from taking part in operations of firms, or by the lost income of households whose members were unable to work. These are only the first round of effects. Secondary effects refers to the changes in other sectors of the economy not directly affected by the shock. For instance, the reduction in income of household because of layoffs and closures of firms affected demand for goods and services. Firms may need to reduce their level of production to respond to decline in demand. Because of reduced production, firms' demand for intermediate inputs may also decline. Over all, the demand for goods and services declined more than the reduction in household demand because of the secondary effects.

CGE models incorporate behavioral assumptions about firms and households. These behavioral assumptions are expressed in terms of the structure of the model itself and the functional form used to represent how economic agents participate in the economy. In this paper, production and consumption activities are nested according to *Figure 6*.

Figure 6. CGE model nesting structure



Source: Authors' illustration

This nesting structure also describes the functional form used to model the behavior of firms and households. First, on the production side, labor and capital are combined to form value added according to a Cobb-Douglas production function

$$va(s) = L(s)_{Skilled}^{\alpha_F} L(s)_{Unskilled}^{\alpha_I} K(s)^\beta$$

where $L(s)_{skilled}$ is the skilled labor input of sector s , $L(s)_{lowskilled}$ is the low skilled labor input of sector s , $K(s)$ is the capital input of sector s , and $\alpha_F + \alpha_I + \beta = 1$

Value added in each economic sector is combined with intermediate inputs from other sectors assuming fixed proportions. This creates sectors' domestic output.

$$d0(s) = \alpha_{va} va(s) + \sum_{i=1}^n \alpha_i q_i$$

where $d0(s)$ is local production of good s , α_{va} and α_i are the shares of value added and intermediate inputs, respectively, to total inputs at the second aggregation level, and q_i is the amount of intermediate input from sector i used by sector s .

Domestic output is either sold in the domestic market or are exported. The choice of the amount of domestic goods sold to local market and foreign market is determined by a constant elasticity of transformation function which takes the following form:

$$d0(s) = g(D(s), E(s)) = [\alpha D(s)^\rho + (1 - \alpha) E(s)^\rho]^{\frac{1}{\rho}}$$

where $D(s)$ is goods sold in domestic markets and $E(s)$ is goods exported.

In this paper, imports and locally produced goods and services are assumed to be imperfect substitutes so that what is consumed as final good by households and as intermediate inputs by economic activities is composite of imports and domestic goods and services. The composite good is called an Armington good. The production of Armington goods follows a Cobb-Douglas production function. Households produce welfare by solving the following programming problem:

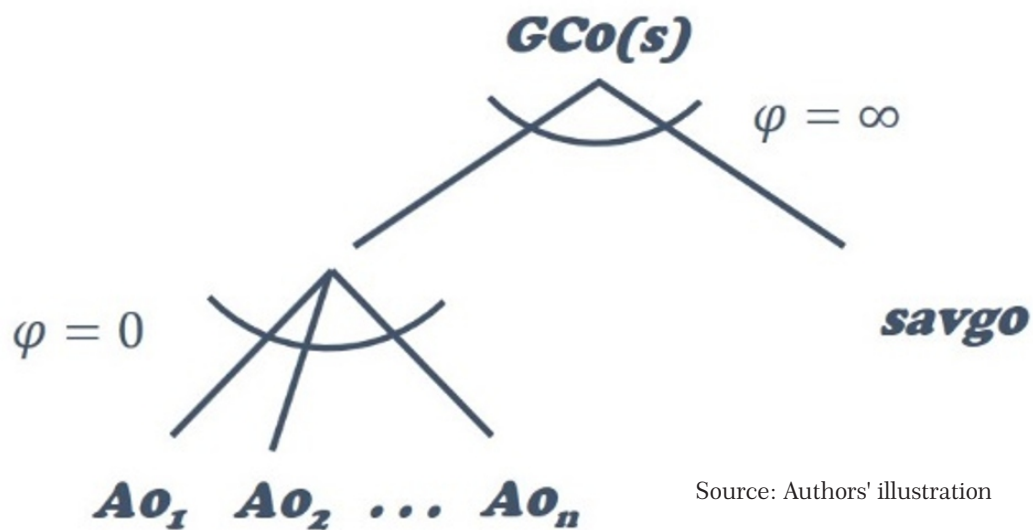
$$\max U(q_1, q_2, \dots, q_n) \prod_{i=1}^n q_i^{\beta_i}$$

$$s. t. \sum_{i=1}^n p_i q_i = m$$

where q_i is the quantity of good i consumed by the household, m is the households' total budget and p is the price of good i . The utility follows a cobb-douglas production function where $\sum_{i=1}^n \beta_i = 1$.

Government's consumption is nested as shown in *Figure 7*. In this paper, the government chooses whether to save or consume its income mainly derived from taxes. At the first level, the government combines goods and services using a Leontief function. At the second level, the government substitutes savings for consumption of goods and services. The aggregation structure presented in *Figure 3* is adopted in this paper to allow the government to use its savings to finance its consumption and other exogenous expenditures which include transfers to households and firms, and subsidies to economic sectors.

Figure 7. Government's nesting structure



The model is calibrated to a dataset called social accounting matrix (SAM), which is discussed in the next section. Calibration means setting the parameters of the model based on actual economic data in the SAM. The model is solved numerically through the MPSGE subsystem of GAMS, a modeling software.⁹

⁹GAMS is an acronym for General Algebraic Modeling System. The MPSGE of GAMS subsystem treats the general equilibrium problem as a mixed complementarity problem.

b. Social accounting matrix

The social accounting matrix (SAM) is a square matrix summarizing transactions in the economy at a given period as shown in *Figure 8*. A SAM's column and rows are labeled according to the economic agent they represent: economic activities, commodities, factors of production, households, firms, government, financial intermediary and the rest of the world. Entries in each cell of a sum represents the amount paid by the economic agent at the column for goods and services supplied by the economic agent at the row. For instance, the cell (Commodity, Household) is the amount of goods and services bought by households in the commodities markets. Note also that an expenditure of the column agent is also recorded as an income for a row agent. Thus, the sum of entries across a column represents the total expenses incurred by the corresponding economic agent while the sum of row entries is the total income of the corresponding economic agent. Moreover, the SAM is balanced, i.e. the column sums equal their corresponding row sums which implies that all incomes of economic agents equal their expenses.

Figure 8. Social accounting matrix

	Activity	Commodity	Labor	Capital	Household	Firm	Government	Savings-Investment	Rest of the World	Total
Activity		c^1							r^1	A
Commodity	a^1				h^1		g^1	s^1		C
Labor	a^2									L
Capital	a^3									K
Household			l	k^1					r^2	H
Firm				k^2						F
Government	a^4				h^2	f^1				G
Savings-Investment					h^3	f^2	g^2		r^3	S
Rest of the World		c^2			h^4			s^2		R
Total	A	C	L	K	H	F	G	S	R	

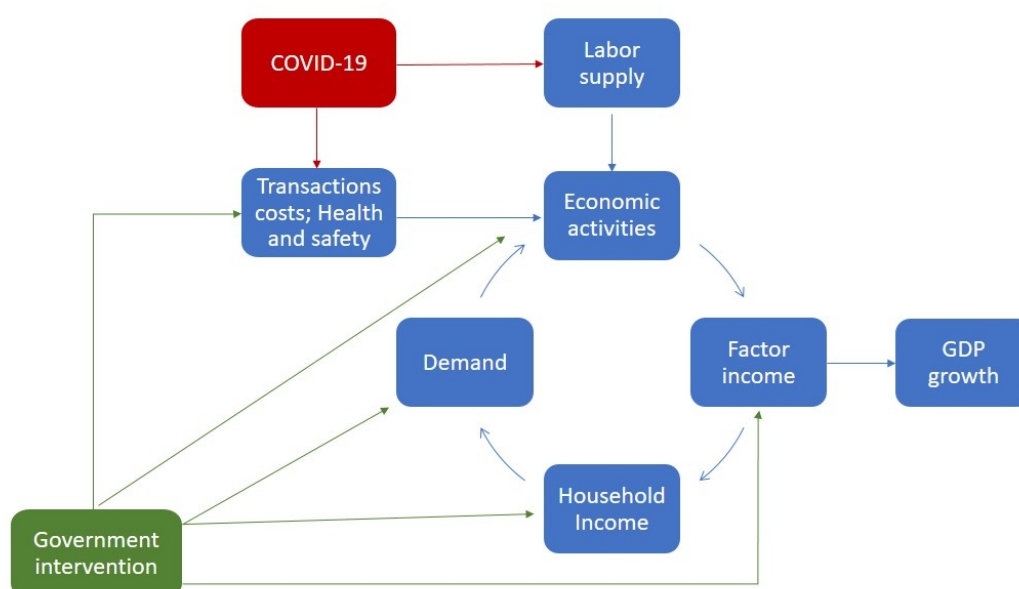
Source: Based on Cororaton (2003).

This paper utilizes a SAM with three sectors (agriculture, industry and services), three factors of production (high skilled labor, low skilled labor, and capital), and the following institutional accounts: 10 representative households corresponding to 10 income deciles, a representative firm, a government, a financial intermediary, and the rest of the world. The SAM is constructed using data from the 2012 input-output table, national income accounts, 2015 FIES-LFS, government tax revenues datasets, and balance of payment accounts.

c. Simulation scenarios

The structure of the effects of COVID-19 pandemic is summarized in *Figure 9*. There are two channels by which the pandemic affects the economy. First, the pandemic restricted the supply of labor of economic activities. Factor income fell with economic activities and because the economy's output is measured in terms of value added, i.e. the sum of incomes of factors of production, GDP and economic growth also fell. Meanwhile, the reduction in factor incomes also reduced household incomes and aggregate demand.

Figure 9. COVID-19 shock and intervention framework



Source: Authors' illustration

Second, COVID-19 increased transactions cost in the economy. The lack of public transportation has made travel to work more costly for workers. Some firms resorted to providing shuttles to their employees while others provided accommodation to keep their workers safe from congested areas. COVID-19 also created health and safety issues in the public and workplaces. Because the government failed to trace all COVID-19 positive individuals during the strict lockdown, an undetected case in a more relaxed quarantine level will high chance of becoming a spreader in workplaces. Thus, firms need to enforce stricter health and safety procedures to keep workplaces COVID-free so they will be able to continue operations. Some firms have required their workers to

undergo COVID-19 testing before they are allowed to work. COVID testing is costly. The DTI-DOLE Interim Guidelines on Workplace Prevention and Control of COVID-19 provide that “testing kits used and procured shall be the responsibility of employers” (DTI-DOLE, 2020: 5) so the cost of testing is not shouldered by *employed* workers.¹⁰ However, the government does not require employers to do COVID testing. COVID-19 created additional costs for firms and because the pandemic does not appear to be eradicated soon, testing can become recurring cost for firms. Additional cost may discourage or reduce economic activities.

Government intervention is important in controlling the pandemic. In Figure 3, there are five channels by which government can intervene to save the economy and control the pandemic. First, the government can absorb the transactions cost through health interventions in the form of mass testing. Government health regulations also count under this channel.

Second, the government can create economic activities which will generate jobs and income for workers. While the government can engage in activities not done by the private sector, at present the activities that can be best done by the state include provision of public transport (through service contracting), provision of infrastructure useful in containing the pandemic, and contact tracing.

Third, the government can increase demand in the economy by augmenting its spending. For instance, tailor fitting public education system to allow new learning approaches online will create more demand for information and communication services. Expanding public health also increase the demand for medical goods and services.

Fourth, the government can continue supporting households through transfers. This will help improve consumer confidence, help recover lost household consumption and alleviate hunger and poverty due to the pandemic.¹¹

¹⁰The case of workers who are applying for work may be different because while they may be required by employers to undergo swab tests, employers are unlikely to shoulder testing cost.

¹¹SWS recently released the results of their hunger survey. They found out that the number of families experiencing hunger has reached the highest level since 2012. See the article by Rappler (2020) available at: <https://www.rappler.com/nation/hunger-philippines-sws-survey-september-2020>.

Lastly, another way to for government to support economic activities is by subsidizing cost of production. There have been proposals to subsidize wages as part of government stimulus. The ARISE bill has provided wage subsidies. The labor coalition, NAGKAISA, has also proposed extending wage subsidies, among other programs, particularly to MSMEs that are struggling. The government is also mulling cutting corporate tax rates through the CREATE bill despite its adverse impact on government revenues.

The simulation exercise implemented in this paper recreates the economic impact of the pandemic as well as determine, ex ante, the impacts of some proposed interventions to save jobs and control the pandemic. A baseline solution of the CGE model is generated and from which, the results of counterfactual runs are compared. The baseline scenario represents the economy in normal conditions. The following scenarios are implemented on top of the pandemic scenario:

Lockdown - displaced labor force (-)

Along with the baseline, the impact of the pandemic is recreated by reducing the labor supply according to labor displacement rate during the lockdown. Muyrong (2020) estimated that about 40 percent of the employed workforce during the lockdown were displaced. In the model, this is implemented as reduction in labor endowments of households.

HH transfers (+)

The government implemented cash transfers to household affected by the lockdown. The amount of cash transfer varies according to the region, however, the government allotted about 200 billion pesos to its social amelioration program in Bayanihan 1.¹² The model adopts this a transfer from government to households.

Tax cuts

The government is pushing for the passage of the CREATE bill which seeks to reduce corporate income tax rate immediately, from 30 percent to 25 percent

¹² See a press release by the Department of Budget and Management (DBM): <https://www.dbm.gov.ph/index.php/secretary-s-corner/press-releases/list-of-press-releases/1647-dbm-releases-p199-975-billion-for-dswd-social-amelioration-program>.

until 2022. The bill further reduces corporate tax rates (CTR) by 1 percentage point every year beyond 2022 until CTR becomes 20 percent. This paper simulates the impact of the first step of CTR reduction as a net reduction in CTR by 17 percent.

Wage subsidies

The NAGKAISA labor coalition proposes wage subsidies for micro, small and medium enterprises (MSMEs) that are unable to shoulder their labor costs. Wage subsidies are also part of the ARISE bill currently pending in the Philippine Congress. In this paper, wage subsidy is modeled as a negative input tax specific for labor inputs of economic activities. Because the model incorporates value added taxes, the inclusion of wage subsidy results in imposing a net tax on labor inputs. The cost function for value added becomes

$$p_i Q_i = (1+VAT)va((1 - subsidy)P_l, P_k$$

where p_i is the price of good i ; P_l, P_k are wages and rental rate, respectively; va is value added; VAT is effective value added tax rate, and $subsidy$ is the wage subsidy rate.

Wage subsidies will reduce the income of the government and will likely cause deficit. In most standard CGE models, deficits do not exist even in static models because in the long run, this will be financed by additional taxes and hence, results in welfare loss. An approach to allow government deficit in static models is to assume that the government is able to finance it immediately. Markusen and Rutherford (2004) address this issue by giving the economic agent in question—in this case, the government—additional income equivalent to the deficit. The government budget line then becomes:

$$\sum_{i=1}^n p_i q_i^g + transfers = net\ tax\ revenues + deficit$$

The drawback in this approach, however, is that it tends to mask the actual impact on welfare especially so because the inserted amount does not entail cost (Markusen and Rutherford, 2004), at least in static models such as the one used in this paper. Nevertheless, the purpose of adding an indicator for additional government revenue is to track the potential size of deficit that would result from policy shocks.

The simulation scenarios are summarized in the following table:

Table 4. Simulation scenarios

Scenario	Shock
Baseline	
COVID-19 labor displacement	40 percent reduction in labor endowment (lockdown) 8 percent reduction in labor endowment (partial reopening of the economy)
Tax cut (CREATE)	17 percent reduction in CTR
Transfers to households	6,500 pesos transfer to households : bottom 50 percent
Wage subsidy	20 percent wage subsidy

Source: Authors

IV. Results

Tables 5-8 present the simulation results using the shocks identified in Table 4. Table 5 presents the impact of labor displacement due to the COVID pandemic and the lockdown. In the simulation, the economy suffers decline of about 17 percent because of 40 percent reduction in labor endowment, mimicking how the economy responded to the pandemic and the lockdown in the real world.¹³ Meanwhile, some recovery is seen when workers were allowed to return to work. As the reduction in labor endowment is adjusted from 40 percent to 8 percent, GDP growth recovers to -3 percent. Although the economy remains in recession, the decline in GDP is shallower. In both scenarios, both government revenues and household utility level (as measured by consumption) decline. Meanwhile, there is a downward pressure on price levels likely due to reduced demand especially from households.

Table 5. Labor displacement from COVID

		Government		
COVID-19 labor displacement	GDP growth	revenue growth	Average inflation	Household utility
40 percent reduction in labor endowment	-17.2%	-30.0%	-11.7%	-15.8%
8 percent reduction in labor endowment	-3.0%	-4.0%	-0.3%	-2.8%

Source: Authors' calculations

¹³ PSA recently revised the growth figure for 2nd quarter 2020 from -16.5 percent to -16.9 percent.

The impact of transfers to households is presented in *Table 6*. Based on simulation, transfers to households does not have impact on GDP and lowers government revenues as expected. Transfers also have no discernable impact on prices. However, transfers support household consumption especially for poor households. In *Table 5*, the impact of the pandemic on household utility is mitigated because of the transfers.

Table 6. Transfer to bottom 50 percent of households

COVID-19 labor displacement	GDP growth	Government revenue growth	Average inflation	Household utility
40 percent reduction in labor endowment	- 17.2%	-34.7%	-11.6%	-14.3%
8 percent reduction in labor endowment	-3.0%	-9.3%	-0.3%	-1.3%

Source: Authors' calculations

Corporate tax cut is among those proposed by the government to encourage economic activities amid the pandemic. In *Table 7*, corporate tax cut is unable to make significant additions to the domestic output as GDP growth remains unchanged. Meanwhile, tax cuts reduce government revenues and reduce household utility. Corporate tax cut will unlikely benefit households because the savings resulting from lower taxes are likely captured by firms.

Table 7. Corporate tax cuts

COVID-19 labor displacement	GDP growth	Government revenue growth	Average inflation	Household utility
40 percent reduction in labor endowment	- 17.2%	-33.5%	-12%	-16%
8 percent reduction in labor endowment	-3.0%	-8.4%	0%	-3%

Source: Authors' calculations

Table 8 presents the impact of 20 percent wage subsidy on the economic variables under observation. Economic activities are directly affected by wage subsidy. With subsidy, the cost of production decreases and hence, economic activities are more motivated to produce more. This is demonstrated by a shallower recession even with 40 percent reduction in labor endowment. At 8 percent reduction in labor endowment, wage subsidy will push the economic growth to positive region which implies economic recovery.

Household utility also declined less with wage subsidy and prices levels remain low because the wage subsidy reduced the cost of economic activities. The cost of wage subsidy, however, falls on the government as revenue falls significantly. In the short run, the government may incur deficit. Deficit can be avoided, however, at the expense of economic recovery and household utility.

Table 8. Wage subsidies (20 percent)

COVID-19 labor displacement	GDP growth	Government revenue growth	Average inflation	Household utility
40 percent reduction in labor endowment	-13.5%	-74.4%	-37%	-12%
8 percent reduction in labor endowment	0.50%	-62.4%	-19%	3%

Source: Authors' calculations

Between household transfers, tax cuts, and wage subsidies, wage subsidies appear to be the most effective in stimulating economic activities and inducing economic recovery. This is because wage subsidy lowers cost of operations, which affects the decision of firms to produce. Wage subsidy is more effective when firms that benefit from it are required to retain their workers. Not only is employment level preserved especially during the pandemic, it also creates economic activities which can have multiplier effects across sectors.

However, the effectiveness of wage subsidies also depends on the extent by which firms can operate. The pandemic imposes restrictions on social activities. Even when firms are motivated to operate because of wage subsidies, the pandemic will continue to hamper economic activities if it remains uncontrolled because the current crisis remains a health crisis after all. Thus, strategies to address the economic crisis must remain focused on addressing the health crisis.

V. Conclusion

The COVID-19 pandemic caused economic crisis and workers and their households are among the severely hit by the crisis. Recognizing that work is closely linked with the economy, policies must be assessed in terms of whether they are able to allow workers to create value in the economy. This paper, therefore, explored the impacts of the labor displacement caused by the COVID-19 pandemic and the alternative policy responses on the economy and on workers. The impact of the pandemic on the economy is simulated using the a CGE model calibrated to a Philippine SAM with three sectors.

This paper discussed channels by which the pandemic affected the economy, and the mechanisms by which the crisis can be addressed by public policy. Various policy scenarios were formulated and their impact on the economy is simulated using the CGE model.

Based on simulation results, wage subsidies are effective in raising domestic output because they directly motivate economic activities, albeit they are also costly as they result in marked reduction in government revenues. Meanwhile, although household transfers almost negligible impact on GDP growth, they nevertheless mitigate the impact of the crisis on households especially the poor. Lastly, corporate tax cuts do not appear to be sound economic policy for recovery.

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