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Impact of COVID-19 on Productivity Growth in Asia: Issues and Perspectives

Dr. Hak K. Pyo



Asian Productivity Organization

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IMPACT OF COVID-19 ON PRODUCTIVITY GROWTH IN ASIA: ISSUES AND PERSPECTIVES

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PREFACE

The P-Insights, short for "Productivity Insights," is an extension of the Productivity Talk (P-Talk) series, which is a flagship program under the APO Secretariat's digital information initiative. Born out of both necessity and creativity under the prolonged COVID-19 pandemic, the interactive, livestreamed P-Talks bring practitioners, experts, policymakers, and ordinary citizens from all walks of life with a passion for productivity to share their experience, views, and practical tips on productivity improvement.

With speakers from every corner of the world, the P-Talks effectively convey productivity information to APO member countries and beyond. However, it was recognized that many of the P-Talk speakers had much more to offer beyond the 60-minute presentations and Q&A sessions that are the hallmarks of the series. To take full advantage of their broad knowledge and expertise, some were invited to elaborate on their P-Talks, resulting in this publication. It is hoped that the P-Insights will give readers a deeper understanding of the practices and applications of productivity as they are evolving during the pandemic and being adapted to meet different needs in the anticipated new normal.

VI | IMPACT OF COVID-19 ON PRODUCTIVITY GROWTH IN ASIA: ISSUES AND PERSPECTIVES

COVID-19 AS A GLOBAL PANDEMIC

It is now approaching a full year since PR China announced the outbreak of coronavirus in the Wuhan area in January 2020. The WHO declared the coronavirus outbreak a global pandemic on 11 March 2020. The pandemic is now called COVID-19 and against the initial optimistic prospects it persists, with the global number of infections reaching over 102 million and cumulative death toll reaching 2 million by the end of January 2021. It is also horrifying to witness the cumulative death toll as of 31 January 2021 in major advanced countries even though new vaccines have been rolled out since mid-December 2020: USA, 450,381; UK, 105,571; Italy, 88,279; France, 75,862; Spain, 59,005; and Germany, 57,512. The death toll in selected Asian countries was: India, 154,312; IR Iran, 58,038; Indonesia, 29,728; Iraq, 13,057; Pakistan, 11,683; the Philippines, 10,669; Saudi Arabia, 6,379; Japan, 5,546; PR China, 4,636; Myanmar, 3,125; ROK, 1,420; Malaysia, 746; Hong Kong, 178; Thailand, 77; Vietnam, 35; Singapore, 29; ROC, 8; Brunei, 3; Mongolia, 2; and Fiji, 2. The above cumulative death toll statistics are only one way to analyze the impacts of COVID-19 but raise the important issue of how the spread of COVID-19 is affecting not only economic standards of living but also sociocultural aspects and the medical capacity of each country or region [1].

In search of economic theory dealing with this type of large-scale pandemic, we can reference the paper entitled The economics of catastrophes by Zeckhauser [2]. He started dealing with the 1995 Hanshin Earthquake in Japan in which more than 6,000 people died and 25,000 casualties and over USD30 billion losses occurred. Zeckhauser emphasized the man-made nature of catastrophes with crowded buildings and structures that may have caused higher death tolls and casualties [2]. After Zeckhauser's writing, the 2011 East Japan Earthquake on March 11(Richter scale 9.0) had caused over 20,000 deaths and casualties by December 2011 with affected residents totaling over 330,000. The AIDS virus spread is another example of a pandemic costing

770,000 lives and it has produced more global, longer-term impacts than earthquakes in Japan. The coronavirus is a unique, much more explosive pandemic in the sense that while AIDS was limited to specific multiples who had sexual contact with infected individuals, COVID-19 spreads to nonspecific population groups [2].

Lockdowns became inevitable in countries (more than 173) and regions reporting COVID-19 cases. The global infection toll had reached over 200,000 (PR China: over 81,000) as of 18 March 2020. As of 31 January 2021, the global total infection toll had reached 103 million, with more than 2.2 million deaths, as shown in Figure 1 and Table 1 [1].

GLOBAL PANDEMIC AND ASIAN CONTAGION

Developing economies in densely populated South and Southeast Asia were initially faced with higher risks because of the following reasons:

- 1. Much lower health system capacity.
- 2. Greater difficulty in following hand-washing protocols;
- Economic structures more dependent on advanced economies' demand and more vulnerable to crises. For example, at the beginning of the COVID-19 outbreak, US flight reductions were expected to be the largest in the Asia-Pacific (-98.1%), followed by Europe (-31.9%), the Middle East (-22.8%), and the Americas (-14.5%).
- 4. Far less access to the internet and therefore far more disruptions in working at home.
- 5. After PR China, COVID-19 spread to the ROK and Japan with higher medical capacity, causing concern in Indonesia, Bangladesh, India, Vietnam, Thailand, and other Southeast Asian and South Asian economies where medical capacities are much lower.

Given capacity limits in intensive care units, medical manpower, etc. slowing down the speed of contagion (flattening the so-called contagion curve) was the most urgent strategy (demand control) and expanding the availability of testing equipment, manpower, and intensive care capacity and ventilators (supply expansion) was also imperative. The only options available were: 1) designing and deploying efficient testing systems; 2) identify the infected fast; 3) isolating the infected; and 4) tracing infection sources. Social distancing and self-quarantining were the key elements in containing the spread of COVID-19. Recent experience with partial lockdown policies and the imposition of social distancing in the ROK has demonstrated the effectiveness of these policies, which resulted in relatively lower infection rates (0.15%) and lower death rates (1.8%) (Table 1) [1].



COVID-19 PANDEMIC: INFECTION AND DEATH RATES IN SELECTED COUNTRIES.					
Country	(A) Total confirmed cases	(B) Total deaths	(C) Population	(D) Infection rate=(A)/(C) (%)	(E) Death rate= (B)/(A) (%)
World	103,148,380	2,229,716	78,420,687,650	0.1	2.2%
USA	26,655,740	450,381	332,135,050	8.0	1.7
Brazil	9,176,975	223,971	213,440,286	4.3	2.4
Russia	3,832,080	72,697	145,971,083	2.6	1.9
UK	3,796,088	105,571	68,094,134	5.6	2.8
France	3,177,879	75,862	65,357,954	4.9	2.4
Spain	2,830,478	59,005	46,765,376	6.1	2.1
Italy	2,541,783	88,279	60,409,742	4.2	3.5
Germany	2,217,234	57,512	83,940,481	2.6	2.6
Asia					
India	10,747,091	154,312	1,387,901,130	0.77	1.4
Indonesia	1,066,313	29,728	275,206,268	0.39	2.8
Bangladesh	533,444	8,111	165,644,274	0.32	1.5
Philippines	523,516	10,669	110,428,130	0.47	2.0
Japan	383,083	5,546	126,249,441	0.30	1.4
Nepal	270,854	2,027	29,440,249	0.92	0.7
Malaysia	209,661	746	32,606,911	0.64	0.4
Myanmar	139,864	3,125	54,622,497	0.26	2.2
PR China	89,522	4,636	1,439,323,776	0.01	5.2
ROK	78,205	1,420	51,295,001	0.15	1.8
Sri Lanka	63,293	313	21,465,681	0.29	0.5
Singapore	59,507	29	5,877,153	1.01	0.0
Thailand	18,782	77	69,902,359	0.03	0.4
Hong Kong	10,400	178	7,532,418	0.14	1.7
Vietnam	1,781	35	97,848,585	0.00	2.0
Mongolia	1,779	2	3,308,896	0.05	0.1
ROC	911	8	23,841,983	0.01	0.9
Cambodia	465	0	16,853,300	0.01	0.0
Asia total	14,198,471	220,962	3,919,348,052	0.36	1.6

Source: Worldometer [1].

TABLE 1

MACROECONOMIC IMPACTS OF THE COVID-19 PANDEMIC

At the beginning of the COVID-19 pandemic, the IGM Pandemic Survey asked top economists about their opinions on the proposition: "Even if the mortality of COVID-19 proves to be limited, is it likely to cause a major recession?" The response was mixed between European economists (strongly agree = 48% and agree = 34%) and US economists (strongly agree = 18% and agree = 44%) [3].

The pandemic affected global oil markets first. Demand in the first three months of 2020 dropped by 435,000 barrels per day compared with a year earlier, according to an International Energy Agency report factoring in the COVID-19 outbreak [4]. At the outset, there was debate on the economic outlook for 2020. The World Bank readjusted its initial forecast of world economic growth in 2020 from 2.7% to 2.5%, and the OECD readjusted its initial forecast from 2.9% to 2.4%. Goldman and Sachs readjusted it further from 3.2% to 2.0%, and Bloomberg from 3.1% to 0.1%.

At the beginning of the COVID-19 outbreak, economic forecasts of US GDP in the second quarter of 2020 were predicted by Morgan Stanley (-30%), Goldman-Sachs (-24%), and JP Morgan-Chase (-14%). But the actual US GDP growth rate recorded was -31.4% in the second quarter and 33.4% in the third quarter of 2020. Morgan Stanley's gloomiest forecast (-30%) thus turned out to be the closest to reality. Jose Scheinkman of Columbia University argued that US suffering from COVID-19 could have been less pronounced if the USA had universal healthcare [5].

Regarding the prospects of recovery, Professor Nouriel Rubini of New York University during a Yahoo Finance interview on 24 March 2020 predicted a depression-like L-shaped long stagnation with no immediate recovery ("Greater depression compared to the Great Depression in 1929–1939") and called for "full lockdown" for 1–2 months like PR China and Italy to protect from going into a depression instead of a recession. Paul Krugman predicted a "permanent recession" after COVID-19. The Yahoo Finance article [6] argued: "Both the stock market and real sector are weak and volatile; markets may collapse."

On the other hand, there was guarded optimism for a possible V-shaped recovery if employment and the business sector were saved. Social distancing was recognized as necessary until the safe return of workers [7]. Garber and Romer (2018 Nobel Prize winner) commented: "It is not only a health crisis but also an economic crisis calling for limited social distancing and partial lockdown policy by returning healthy workers with immune systems working and uninfected to workplaces so that economic activity can be normalized. Investment in protective equipment and devices is better than tantamount counterdepression budgets and we cannot live on unlimited social distancing until 12–18 months later when the vaccine or medication is developed and tested. We may live but the economy will die" [8]. Sweden seemed to have followed this model of limited social distancing and partial lockdown policy compared with the Netherlands, Demark, and Norway with their social distancing and full lockdown policies [9].

But as of 28 March 2020, the global spread of COVID-19 was faster, wider, and more persistent with no immediate outlook of a slowdown. It looked like an L-shaped persistent recession and prolonged recovery were more likely. Four stages of productivity shocks due to the COVID-19 pandemic had occurred:

First stage: Many disruptions across supply chains and value chains. The hardest-hit sectors were: 1) tourism and hospitality due to lockdown policies; 2) aviation/airlines; 3) oil and gas; 4) automobiles; 5) consumer products; and 6) consumer electronics and semiconductors.

Second stage: Unemployment soared from lower-skilled jobs affecting aggregate demand, which would head to a sharp downfall. Strong heterogeneity across sectors existed; high-skilled and higher-income bracket employees were more likely to work from home. The US unemployment rate was at a record low (3.5%) in February 2020 but soared to 5.5% in March, with 3,283,000 people becoming unemployed (the worst week on record), which could go up to 13% in several months. Unemployment in March 2020 and shutdowns affected 51% of the US population. The downturn could exceed the pain of the recession in 2007–2008.

Third stage: Firms dependent on cash flows lacked liquidity to fulfill supply commitments and were forced to file bankruptcies (in the ROK, low-fare airline Eastar filed for bankruptcy). A demand and supply loop developed similar to the loop during the financial crisis which is different from war/ disaster in which demand might pick up due to potentially inflationary government fiscal stimulus to rebuild.

Fourth stage: Unemployed workers had no stable income and therefore reduced consumption. Financially stressed firms cut off further workforce expansion including full-time jobs and canceled and postponed investment projects due to uncertainty. Further reductions in aggregate demand caused large reductions of economic surpluses (consumer surplus + producer surplus).

Rising income inequality and economic depressing loops may develop as follows:

- 1. Many small businesses rely on cash flows to keep afloat but they become short on cash earnings.
- 2. Many mortgagors and renters have little cash on hand because of being laid off or reductions in working hours.
- 3. Large drops in demand may force firms to close and cut their workforces, first part-time and then full-time employees.
- 4. Lower-skilled (construction) workers and those in low-paid jobs (seasonal farmers and undocumented workers) cannot work from home and therefore income inequality rises. Economy falls into a depressing loop.

COULD THE NEXT NORMAL EMERGE FROM ASIA?

Economists [10] predicted an acceleration trend in readjusting global supply networks due to COVID-19-related trade wars. Global companies like Apple will increase inventory of parts and components near the USA and assemble them using smart factory technology. Their profit rates will decline but they will become more resilient in recovering from shocks like COVID-19. Global demand for electronic commerce, digital payment systems, and remote work practices including biology–health-related reform will increase. Cross-border investment in 2020 was predicted to decline by 30–40%.

McKinsey & Company predicted that the next normal would be a transition from globalization and regionalization. COVID-19 demonstrated that global supply chains are very fragile. Global companies, particularly Japanese automakers and Korean electronics firms, may shift supply networks from PR China to other Asian regions. McKinsey predicted that the demand for online services (PR China's Ding Talk, Work, Meeting) and the ROK's delivery services like Coupang and SSG.com would increase making contactless transactions a permanent consumption pattern. McKinsey advocated for "rethinking social contracts" that governments need to restore the confidence of firms and consumers, while firms must take the responsibility for employment and manpower reallocation [11].

The new normal in Asia may be observed in recent foreign investment statistics by firms in the ROK. According to the Ministry of Planning and Finance, Korean firms' direct investment in the country during 2015–2020 reached USD7 billion (23.2%) in 2015, USD13.6 billion (34.3%) in 2016, USD15.2 billion (34%) in 2017, USD11.2 billion in 2018, USD14.7 billion in 2019, and USD9.5 billion (25.5%) in the first three quarters of 2020, in which the percentage figures in parentheses are the shares in total foreign investment by ROK firms in the year. On the other hand, ROK firms' investments in PR China were USD3 billion (9.8%) in 2015, USD3.4 billion (8.6%) in 2016, USD3.2 billion (7.1%) in 2017, and USD5.8 billion and (9.3%) in 2019 but declined sharply to USD2.9 billion (7.7%) in the first three quarters of 2020 after COVID-19 [12].

However, the economy of PR China has recovered from COVID-19 fairly well. According to the China National Bureau of Statistics, quarterly growth rates in real GDP were: 2019 Q1, 6.3%; Q2, 6%; Q3, 5.9%; and Q4, 5.8%. In 2020, they were: Q1, –6.8%; Q2, 3.2%; Q3, 4.9%; and Q4, 6.5% (Figure 2) [13]. In annual terms, the Chinese economy recorded real GDP growth rates of 6.1% in 2019 and 2.3% in 2020 in the aftermath of the COVID-19 pandemic. PR China seemed to be the only major economy that recorded a positive growth rate in 2020.

The resilient Chinese economy can be seen in both industrial output statistics (Figure 3) and retail sales statistics (Figure 4) [14, 15]. Industrial output plummeted by -13.5% in January-February 2020 from the corresponding period in 2019 but recovered to 4.8% in June 2020 and 7.3% in December 2020. Retail sales also plummeted by -20.5% in January-February 2020 from the corresponding period in 2019 but recovered to -1.8% in June 2020 and 4.3% in December 2020 [14, 15]. The IMF [16] and OECD [17] forecast PR China's real GDP growth in 2021 to be 8.1% and 8.0%, respectively, owing to the base effect of the Chinese recovery from COVID-19 in 2020 [16]. The Chinese Academy of Social Sciences also predicted a 7.8% real growth rate in 2021 owing to: 1) favorable economic indicators; 2) stable supply network of industrial output; 3) effects of antipoverty policies; 4) stable employment trends; 5) industrial restructuring from traditional to emerging industries; and 6) acceleration of reform and open-market policies. The Chinese government declared the 2021 target economic policy to be stabilization and qualitative development by adopting the Twin-cycle Strategy and Demand-side Reform Policy [18]. Considering the relatively large contribution (60%) to GDP growth by domestic consumption, the government wanted to develop both domestic and external demand in a balanced way. It also declared an antimonopoly policy and regulatory reforms in two problem sectors directed at the monopoly nature of internet platform enterprises and real estate speculation.

My prediction based on the above observations is that shifting supply networks from PR China to other Asian regions may happen more slowly over time because global investors in PR China including Japanese automakers, Korean electronics firms, and others had invested to access the Chinese market rather than based on cost factors. The resilient recovery of the Chinese economy after the COVID-19 pandemic will slow down the new normal phenomenon of exiting from PR China.





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MACROECONOMIC POLICY IMPERATIVES

What we observed after the first shock of COVID-19 was that individuals cut consumption due to self-quarantining and social distancing, and firms cut costs and investment projects, reduced workforces, and defaulted on loans and supplier contracts. Banks with rising nonperforming loans will ultimately cut lending. The economic costs of suppression strategies at the beginning of the pandemic were anticipated to be a temporary drop of 50% a month and then of 25% in the two following months, with a GDP drop of 10% in annual US output. Longer lockdown policies were expected to cause a supply/demand downward spiral that could exceed 15% of GDP. Output loss during the recession of 2007–2008 was estimated to be about 4.5%. However, output loss resulting from the COVID-19 pandemic will be permanent, and a global recession including the USA, Europe, and PR China seemed inevitable during the first and second quarters of 2020.

Therefore, immediate, massive fiscal packages seemed necessary. The UK announced a package worth of 15% of GDP; the USA announced USD2 trillion (10% of US GDP = USD20 trillion) in a lifeline relief fiscal package (USD350 billion in loans for small businesses, USD500 billion in aid to airlines and large corporations, expanded unemployment benefits, USD1,200 payments for each adult and USD500 per child in households earning up to USD75,000 per year for individuals or USD150,000 for couples). These were not economic stimuli but a series of survival payments. The EU was considering the issue of Euro Corona Bonds worth €750 billion. The Government of the ROK introduced a unilateral survival cash payment of about USD900 (KRW1 million) per household. The relative size of fiscal stimulus packages reflects the ratio of tax revenue in GDP (Table 2) and government spending for COVID-19 per GDP (Figure 5) [19, 20]. In general, the following measures have been adopted by different governments:

 Temporary universal income to households (some ROK local governments initiated universal income packages tailored to local needs and constituents' consent);

- 2. Cash grants and credits to firms;
- 3. Tax relief, tax cuts, tax holidays and incentives, and tax rebates;
- 4. Lower interest rates, launch QE programs (Federal Reserve System in the USA and Bank of Korea launched unlimited repurchase operations by repurchasing RPs held by financial institutions, a QE policy) and different lending schemes after COVID-19; and
- 5. Priority government spending on the public health sector.

TABLE 2

SHARE OF TAX REVENUES IN GDP (2019) IN SELECTED COUNTRIES (%).

Canada	33.5	Mexico	16.5
Denmark	46.3	New Zealand	32.3
France	45.4	Portugal	34.8
Germany	38.8	Spain	34.6
Italy	42.4	UK	33.0
ROK	27.4	USA	24.5

Source: OECD [19].



There are two sectors most seriously affected by the COVID-19 pandemic. One of the most serious socioeconomic problems is unemployment in hard-hit industries, particularly part-time and temporary jobs. The second is selfproprietors who are mostly affected by continued lockdown policies. There are widespread illegal receivers of unemployment benefits. Unemployment compensation in the ROK is an entitlement known as job-seeking payments for a period of four months to those who have worked more than 180 consecutive days and who were laid off involuntarily. The daily payment was a minimum of USD6, which was raised from USD4 by the current government. According to statistics compiled by the National Assembly, illegal receipt of unemployment benefits during January-November 2020 reached a total of 23,000 cases (USD20.2 million). Those cases included those who filed illegal reasons for layoffs or who concealed current employment after layoffs. During the past five years, the total number of unemployment benefit receivers who refiled for unemployment benefits within a year reached 92,500, with a total amount of USD333 million. There were over 10,000 receivers of a total of USD43.5 million who repeatedly received benefits more than five times within five years [21].

The rescue payments to self-employed proprietors differ among advanced countries. Germany has paid up to a maximum of \notin 500,000 for those who closed down their businesses due to lockdowns during the first half of 2020. Canada offers a recovery support payment of CAD1,000 (USD782) every two weeks for 26 weeks or up to CAD13,000 (about USD10,200). In Japan, there are three different kinds of support payment system for proprietors including SMEs. The first type, called continuation payment, is for those proprietors and SMEs that experienced sales reductions of over 50% after COVID-19 with a maximum JPY2 million (about USD19,100). The rental support payment was provided for up to six months with a limit of JPY6 million (about USD57,300). There were also local government support payments called the Closed Business Support Fund.

According to the OECD, the percentage of self-proprietors in the ROK is estimated to be 25.1%, which is almost the double the average percentage figure (13.7%) of G7 countries [22]. On the other hand, the nominal average GDP of G7 countries in 2020 was USD5.5 trillion, which was more than three times the nominal average GDP of the ROK in 2020 (USD1.6 trillion). According to Statistics Korea and the Bank of Korea, the total number of self-proprietors and their employees as of November 2020 was an estimated 6.6

MACROECONOMIC POLICY IMPERATIVES

million persons (24.1%) out of the total employed (27.2 million). The share of self-proprietors' output (USD72.7 billion) during the third quarter of 2020 was estimated to be 17.5% of total GDP (USD416.2 billion) [23]. Therefore, the impacts of COVID-19 and lockdown policies must have been relatively heavier in the ROK than in G7 countries.

The problem encountered by governments is how to equitably distribute support payments to avoid illegal payments and moral hazard issues. The actual amount of opportunity cost or foregone income is very difficult to assess. One proposal that I suggest is linking support payments to the previous year's corporate or personal income tax and/or value-added tax.

GLOBAL DEBT OVERHANG AND INEQUALITY IN INCOME AND HUMAN CAPITAL

In the USA, a total of 3.3 million people filed for unemployment benefits during the second week of March 2020. In 2018, 157 million workers were officially employed. Because 53 million low-age workers' median annual income was USD18,000, six-month coverage of their wages would have cost USD477 billion for the entire workforce, which had a median income of USD64,000, with six months of paychecks costing USD5 trillion.

The US cumulative federal debt by the end of 2019 was USD23 trillion, or about 105% of GDP. Cradle-to-grave benefits like national healthcare, free public education, extensive parental leave, job-training programs, and cash grants for unemployed are Scandinavian but not US models. The USA as the global reserve currency holder cannot depreciate the dollar because it would invite inflationary threat. According to the Institute of International Finance (IFF), the total world debt outstanding by households, corporations, and governments as of the end of 2020 had reached USD277 trillion, which was about 3.65 times the world GDP that year (Figure 6). The debt/GDP ratio in selected countries is shown in Table 3 [24, 25].

The ILO [26] reported that 81 million people (71%) out of the 114 million globally unemployed due to the effects of COVID-19 had given up the search for new jobs. Flexibility in labor markets is the key to protecting workers from this kind of pandemic. The US unemployment rate soared to 15% in May 2020, two months after the COVID-19 pandemic began. But after a series of labor protection programs such as the Payment Protection Program (PPP) had been introduced, the unemployment rate declined to 6–7% near the end of 2020. The unemployment rate in Europe by the end of 2020 had been reduced to the pre-COVID-19 level owing to massive labor market protection programs.

The effect of COVID-19 on labor markets in Asia needs country-specific indepth studies. For example, in the ROK, COVID-19 has increased the number of people who are no longer searching for jobs and therefore out of the labor force. The government created 945,000 public jobs by injecting KRW3 trillion (USD27.3 billion). But the number of people who became unemployed and gave up searching for jobs increased from 2.1 million in 2019 to 2.4 million (5% of the total population) in 2020 after COVID-19. The age brackets of the "not in the labor force" group were 15–29 years (50%), 40–50 years (40%), and 50 years and older (10%). College graduates were the largest educational cohort group, occupying 46% of those not in the labor force. Another labor market movement after COVID-19 to be noted in the ROK was the sudden increase in two-job seekers.

The number of two-job holders was estimated to be 409,000 persons in 2016 but increased to 473,000 persons in 2019 and 447,000 persons in 2020. It should be noted that the sudden increase in two-job holders between 2016 and 2019 had nothing to do with COVID-19.



TOTAL DEBT AND SHARE IN GDP IN SELECTED COUNTRIES.				
Asian countries	Total debt	Debt as % of GDP		
India	1.56508E+12	54.2		
Indonesia	3.0868E+11	26		
Bangladesh	38356830601	28.3		
Philippines	1.6446E+11	45.8		
Japan	1.20428E+13	261		
Malaysia	2.53993E+11	66.4		
PR China	1.95259E+12	17.7		
ROK	3.79397E+11	26.3		
Singapore	3.42654E+11	92.7		
Sri Lanka	55822404372	81.4		
Thailand	2.69277E+11	57		
Hong Kong	-16674863388	-10.7		
Vietnam	94854098361	45.6		
ROC	2.94713E+11	48		
Total and average	1.7746E+13	60.0		
Non-Asian countries	Total debt	Debt as % of GDP		
USA	1.59912E+13	103.7		
Canada	1.74011E+12	85		
Germany	2.79267E+12	85.8		
Italy	2.32566E+12	112.6		
UK	2.86159E+12	103.7		
Spain	1.1296E+12	91.1		
Russia	2.79267E+12	8		
France	2.52075E+12	102		
Total and average	3.21542E+13	86.5		

TABLE 3

Source: Economist [25].

Although it was mainly affected by a drastic minimum wage increase and a new regulation limiting working hours to 52, COVID-19 has reduced two-job holders' welfare because they could not find secondary jobs. We should note that labor market regulation can do more harm to the welfare of part-time seekers than COVID-19.

Professor Christina Romer, who served as Chairman of the Council of Economic Advisors (CEA) during the Obama administration, in her address at the American Economic Association (AEA) 2021 Annual Meeting (3 January 2021) argued that the US rescue plans did not have multiplier effects. She pointed out that the PPP, which was the single largest rescue program exempting employers from loan repayments if they maintained employment levels, was estimated to have produced fiscal multiplier effects only up to the 0.36 level. Professor Romer estimated that 52% of PPP funds was spent on repayment of loans and 33% on savings, with only 15% linked to consumption expenditure. She estimated other large-scale rescue programs' fiscal multiplier effects to be only at the 0.58 level, which means that if the US federal government increased the program budget by USD100, the stimulus effect would be limited to only USD58. The US government budgeted one of the historically largest recovery rescue packages of USD2.637 trillion (almost 12% of US GDP) [8].

Raj Chetty of Harvard University pointed out at the AEA 2021 Annual Meeting that the difference between 1929 Great Depression and 2020 COVID-19 recession was that the reduction in consumption of higher-income brackets was larger in 2020 than in 1929. He estimated that the offline consumption weight in total consumption was reduced from 66% to 33%, and higher-income brackets reduced consumption expenditure on in-person services at hotels, restaurants, etc. [8].

The traditional fiscal rescue programs were not only ineffective in consumption recovery but also failed in reducing income and wealth inequality and the degree of polarization. In the USA, the employment rate among those in the lower 25% income bracket was reduced by 37% between January and April 2020. Due to the slow recovery throughout 2020, the reduction of the employment rate was limited to 19% at the end of the year. On the other hand, the top 25% income bracket's employment reduction was limited to 13% by April 2020 and recovered to the level of +1% by the end of 2020. Professor Chetty estimated that primary school students in the lower-income class experienced a 19.9% reduction in mathematics course learning, while those in higher-income classes experienced only a 1.8% reduction. This implies that children from lower-income families will suffer from a permanent loss of human capital because their parents cannot afford online office work.

The recent episode of the ROK's Disaster Support Payments illustrates how government programs do not necessarily help reduce income inequality and instead may increase it. The government implemented the first National Disaster Support Payments (KRW14.2 trillion = USD12.7 billion) in May– August 2020 which were designed to replenish about KRW1 million (about USD910) per household via credit cards. A total of 99.5% of households received the payments. According to the Korea Development Institute (KDI) [27], the estimated expansionary consumption effect of the Disaster Support Payments was estimated to be about KRW4 trillion (about 30% of total payments). In other words, the average household spent about 3% of KRW1 million of disaster payments on consumption and used the remainder (70%) on debt repayment or savings.

The estimated expansionary consumption effect was similar to the effect of the US tax exemption policy in 2001 (20–40%) but a bit higher than the estimated effect of the ROC's 2009 consumption coupon policy (24.3%). The sales expansion effects compared with the corresponding period in 2019 of the National Disaster Support Payment plan were: durable goods and semi-durable goods, 10.8%; necessities, 8.0%; offline services, 3.6%; and food, 3.0%. Therefore, despite the policy, leisure, hotels and travel, restaurants, etc. did not benefit due to continued lockdown and social-distancing policies. The KDI [27] recommended a more specifically designed disaster payment plan such as direct income support for employees of affected industries. In the third quarter of 2020, the ROK's top 20% of households' monthly income increased from the corresponding period in 2019 by 2.9%, while the bottom 20% of households' monthly income declined by 1.1% [27].

The expansionary fiscal rescue programs adopted by advanced nations and Asian countries together with their debt overhang may invite stagflation for the foreseeable future. At the same time, the asset market bubble in both real estate and the stock market caused by too much liquidity from rescue programs will polarize income and wealth inequality. Thomas Piketty in his recent book Capital and Ideology in the Twenty-first Century [28] argued that COVID-19 exposed the world's "virulent inequality" and called for a 90% wealth tax on highly affluent people. He wrote that any nation's degree of inequality derives directly from political decisions that could be reversed if governments had the will to do so. With stunning speed, the viral outbreak has inflicted disproportionate suffering on poorer communities. Even in affluent nations, a majority of households have become suddenly vulnerable as layoffs mount and savings are drained [28]. Piketty noted that delivery workers on bicycles around Paris are risking their lives because they need money. Millions of migrant workers in India have been left homeless as that nation's businesses have shuttered. A central question for all of us is whether the COVID-19 crisis will prove to be a catalyst that drives policy changes from paid sick leave to government-provided healthcare to a reordering of the tax codes that might narrow the wealth gap. Economists, including those recently surveyed by the University of Chicago, warn that the COVID-19 outbreak will worsen already high levels of inequality in the USA. Even accounting for USD2 trillion-plus in government aid, 84% of economists surveyed said that low-income workers would suffer a bigger hit to their incomes than more affluent people. US Democratic voters in 2020's presidential primaries bypassed Senators Elizabeth Warren and Bernie Sanders, both of whom forcefully advocated for wealth taxes. They chose instead former Vice-President Joe Biden, whose economic views are more centrist [28].

Piketty suggested that voters could either shift toward his ideas in the aftermath of a crisis like COVID-19 or reject them entirely and embrace nationalism more fully. "In these times of crises like the one we have today, there are different possible trajectories that can be taken," Piketty wrote. "It could really go both ways" [28].

POLICY OPTIONS FOR PRODUCTIVITY GROWTH IN ASIA

As outlined above, the debt overhang and inequality in income and wealth imposed on Asian economies after COVID-19 are tremendous burdens. The only viable policy option is to enhance productivity growth in sectors where each country in Asia has comparative advantages. We can put economies in Asia on a sustainable growth track by improving the overall productivity so that a pay-as-you-go system can work for debt-stricken economies. Since every country in Asia has been affected by COVID-19 differently, we cannot design a universal policy package. However, the lessons we learned from the unprecedented global pandemic may direct us to search for the following policy directions and options to revitalize economic activity and enhance productivity growth where necessary.

A Universal Healthcare System

One of the most important lessons we have learned from the episodes of each country's lockdown policy and restrictions after the COVID-19 outbreak is the remarkable differences among nations in the speed and scale of its spread. At the beginning of international spread in March 2020, we were astonished by observing the high speed and alarming magnitude of infection spread in advanced economies like the USA and Italy. The lack of a universal healthcare system in the two nations was to blame, among other factors. On the other hand, the lockdown policy maintained by the ROC, Singapore, and Vietnam seems to have worked better due to strong state imposition of social distancing and the universal healthcare systems they have maintained. It is also interesting to note that a universal health system is a necessary but not a sufficient condition for protecting citizens from the pandemic spread. Comparing Japan and the ROK, both nations share a similar socioeconomic structure and urbanization, healthcare systems, etc. but COVID-19 spread in Japan has been more explosive than in the ROK. We may conjecture that the relatively heavier

reliance on public transportation and office-work environment in Japan might have affected COVID-19 spread more in the negative direction.

A universal healthcare system is a core policy that needs to be adopted to enhance productivity growth in Asia. It affects both the aggregate demand side and supply side of output after a pandemic like COVID-19. The demand side is affected because the mass of consumers needs to stay healthy to occupy tangible sources of aggregate demand. On the other hand, the supply side is affected by the labor service and enhanced human capital of healthy workers.

Therefore, even though there is a pent-up demand for rescue funds to help the unemployed and self-proprietors in financial trouble in many parts of Asia, the rescue funds can be wasted without a universal healthcare system that can upgrade detection of viral infection, hospital manpower and facilities, and overall monitoring of social distancing and emergency control measures.

Wage-led Growth Policy vs. Profit-led Growth Policy

In the aftermath of the COVID-19 pandemic, many governments in Asia relied on fiscal rescue funds to help the unemployed and troubled proprietors. But in addition to the fact that the bulk of such rescue funds could be wasted and could create another round of moral hazard, they may affect productivity negatively by making zombie firms and proprietors stay afloat and the disguised unemployed stay alive on welfare and rescue benefits.

In particular, populist regimes in Asia have a tendency to adopt policy agendas such as sudden increases in minimum wage rates, reduction of working hours, employment guarantees for public-sector workers, rent control, and regulatory measures in the labor market. By and large, most of these populist agendas work in the opposite direction of productivity enhancement, upgrading, and an innovative managerial spirit. As outlined in Pyo [29], the rising inequality through time in income and wealth distribution has been demonstrated by Piketty [28] and Milanovic [30]. It has been the cause of unequal growth and produced a syndrome of pro-poor growth and inclusive development.

Even though Asian countries are tempted to adopt wage-led growth policies as post-COVID-19 populist policy options, they would be better off if they could rely on profit-led or investment-led growth policies because the Fourth Industrial Revolution calls for innovation and a creative managerial spirit. Wage-led growth as reviewed in Pyo [29] could leave economies in wage-price spirals and erode the competitive edge of Asian economies.

A Productivity-enhancing Sustainable Growth Path for Asia

There are two groups of countries in Asia. One group is those with per capita income over USD40,000 which includes Japan, Singapore, the ROK, and ROC. The other group is emerging market economies including Indonesia, the Philippines, Malaysia, Vietnam, Thailand, India, Bangladesh, Cambodia, Lao PDR, Myanmar, Sri Lanka, etc. The first group of advanced market economies is facing aging issues and stagnant investment; the second group of emerging economies is facing stagnation in the global economy and lack of demand for their products and services.

According to neoclassical growth models such as those of Solow [31], Phelps [32], and Piketty [28], a steady-state balanced growth rate (g) of GDP must be equal to the sum of the population growth rate (n), growth rate of total factor productivity (v), and depreciation rate (\bar{o}) of capital stock in the economy (g = $n + v + \bar{o}$). The first group of Asian countries has lower population growth rates and depreciation rates. Therefore, the only exit from stagnation is by maintaining higher total factor productivity growth, which is an overall efficiency measure of the economy. Therefore, to find an exit from COVID-19 stagnation, they need to improve the overall efficiency of their economies by creative destruction and innovation. On the other hand, the second group of emerging market economies, which has relatively higher population growth rates and depreciation rates, needs to enhance productivity growth through continuous upgrading of infrastructure and human capital to recover from COVID-19. It is also important to note that investment in human capital is the best means of reducing income and wealth inequalities.

POST-COVID-19 RECOVERY PROSPECTS IN ASIA

As the inflationary pressure from cumulative global debt and fiscal and monetary expansion by COVID-19-affected countries build momentum, there can be a "super cycle" in 2021 in which we observe a long upward trend in major commodity prices. The average crude oil price started at the USD60 per barrel level at the beginning of 2020, plummeted to the USD10–20 level in April after the outbreak of COVID-19, and recovered to USD50 by the end of 2020. It was predicted that the demand for crude oil in the third quarter of 2021 would reach the level of the third quarter in 2019 as the global economy recovered from the COVID-19 recession. The price of copper, which is frequently quoted as a barometer of the real-sector economy, was at the bottom (USD4,617 per ton) at the end of March 2020 but recovered to the level of USD8,000 per ton by the end of 2020. The prices of iron, gold, and soybeans have recovered to the pre-COVID-19 levels, as shown in Figure 7 [37].

Post-COVID-19 recovery prospects in Asia depend on two factors: 1) the degree and speed of containing the pandemic through vaccination; and 2) economic recovery in the USA and PR China. The IMF in its World Economic Outlook (October 2020) [36] reported that global income in 2020 will be reduced by 8.3% from the level in 2019, and its World Economic Outlook (March 2021) revised the earlier estimate (October 2020) of the 2020 world GDP growth rate from -4.4% to -3.5%. It also adjusted the forecast world GDP growth rate in 2021 from 5.2% (estimated in October 2020) to 5.5% (estimated in January 2021). The IMF adjusted upward its forecast of the US GDP growth rate in 2021 from 3.1% to 5.1%. Its forecast GDP growth rates in 2021 are PR China, 8.1%; India, 11.5%; and Japan, -5.1% in 2020 and 3.1% in 2021. The Bank of Korea [35] estimated the ROK's 2020 growth rate at -1.0%, one of the smallest negative growth rates among OECD countries. In October 2020, it also forecast the country's GDP growth rate in 2021 would be 2.9% but adjusted that to 3.1% in the WEO of January 2021. However, the IMF adjusted estimates

of GDP growth rates in the Euro zone, including Germany, France, Italy, and Spain, downward because of continued lockdown policies maintained by those European countries (Table 4) [16].

The inauguration of Joseph Biden as the 46th president of the USA set the tone for a massive recovery package called the American Rescue Plan, often referred to as "Bidenomics (Biden + economics)," to tackle the twin crises of COVID-19 and the pandemic-related recession. The American Rescue Plan envisions more specific sector-targeted and people-targeted efforts with a total budget of USD1.9 trillion. It includes a cash supplement of USD1,400 per person, increased weekly unemployment compensation until September 2021 from USD300 to USD400, and extension of the moratorium on eviction of rental occupants.



TABLE 4

GROWTH RATE OF REAL GDP IN 2020 AND 2021 IN SELECTED REGIONS.

Country/region	Annual change (%)	
	2020	2021 (projection)
World	-3.5	5.5
USA	-3.4	5.1
Germany	-5.4	3.5
France	-9.0	5.5
Italy	-9.2	3.0
Spain	-11.1	5.9
UK	-10.0	4.5
Canada	-5.5	3.6
Emerging and developing Asia	-1.1	8.3
Middle East and Central Asia	-3.2	3.0
Japan	-5.1	3.1
PR China	2.3	8.1
India	-8.0	11.5
ASEAN-5*	-3.7	5.2
ROK	-1.9	3.1

*ASEAN-5 = Indonesia, Malaysia, the Philippines, Thailand, and Vietnam. **Source:** IMF [16].

There is also discussion in the US Congress about an increase in the federal minimum wage rate from USD7.25 to USD15 per hour. It reflects the "high-pressure economy" proposition laid out by Treasury Secretary Janet Yellen appointed by President Biden, who argued that the smartest policy under the historically low-interest regime is to "act big." The reason why Secretary Yellen is opting for a high-pressure strong recovery plan is to avoid the "hysteresis effect," which suggests that if the economy is under recession with high unemployment, then economic units lose confidence in growth and this syndrome is reflected in actual economic activity, making the real growth rate lower than the economy's potential growth rate. The hysteresis effect was historically observed during recession in the USA in the 1980s and in Japan in the 1990s.

The US policy under the American Rescue Plan was echoed by FRB Chairman Jerome Powell who stated that there was no immediate plan for tapering off (reduction of bonds and securities through open market operation), reflecting from the lessons learned after the premature exit from quantitative easing after the global recession in 2007–2008. The Federal Reserve system was still purchasing a total of USD80 billion in US Treasury bonds and USD40 billion dollars in mortgage-backed securities (MBS) as of mid-January 2021.

The US bond market was signaling an increase in interest rates beginning in January 2021. The annual interest rate on 10-year maturity US Treasury bonds in the New York bond market had been 1.041%, which collapsed to 0.318% in March 2020 after the COVID-19 outbreak. The market was anticipating that the new government would propose a trillion-dollar recovery package that would put upward pressure on Federal Reserve's base interest rate, which was at the 0–0.25% level as of January 2021. That would make the dollar appreciate against other currencies and put upward pressure on interest rates in other countries.

On the other hand, there is a persistent view that the USA will maintain quantitative easing by means of the repurchase of Treasury bonds and MBS until the end of 2023 because the US unemployment rate is still above 6% and the inflation rate below 2%. Carmen Reinhart, Chief Economist at the World Bank, cautioned at the AEA 2021 Annual Meeting that we should not confuse a temporary recovery with a permanent recovery in the immediate period after the COVID-19 shock. He argued that a permanent recovery will only occur if and when the per capita income returns to the pre-COVID-19 level. He predicted that recovery in service industries will take longer.

Post-COVID-19 recovery in Asia will depend on two aspects. First, in designing and implementing rescue plans and labor protection programs in the aftermath of COVID-19, governments must avoid populism and moral hazards. In general, sector-specific rescue programs or labor protection programs are more effective in reducing poverty and unemployment than a national universal rescue plan. It will also depend on how effectively vaccinations can be carried out. Effective vaccination requires both fiscal input and medical capacity. Second, there is a need to enhance productivity through industrial restructuring. After COVID-19, Asian nations need to rebuild health-related infrastructure and universal healthcare systems. They also need to upgrade their traditional manufacturing and service sectors in offline and online facilities through employee training programs. Third, productivity improvement in traditional manufacturing and service industries in Asia is necessary for sustainable growth but is not a sufficient condition alone. Asian nations need to board the train of innovation and make investments in offline products and services and ICT industries. Tesla became a global automobile manufacturer just 20 years after establishment. Zoom became a global giant almost at the same level as IBM 10 years after its establishment. Apple, Facebook, and Amazon became dominant globally after 2000. According to CNBC, the leading seven ICT companies' total stock value reached USD3.4 trillion, more than India's 2019 GDP. According to the ROK Ministry of Medium and Small Enterprises, total sales by all venture firms as of the end of 2019 reached KRW193.4 trillion (USD176 billion), surpassing the sales total of the Hyundai Business Group. Their employees reached 804,000, and their new hires were five-fold more numerous than those of the top four ROK conglomerates. Productivity enhancement through new types of innovative venture firms is affected by government support but, more importantly, by government initiatives for deregulation, restoring labor market flexibility, and infrastructure investments.

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