Covid-19 and GDP growth: An alternative Perspective

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To contain the Covid-19 pandemic, many countries, including Bangladesh, adopted various degrees of lockdown and social distancing measures. Although vital in suppressing the disease, these measures have also precipitated an unprecedented economic crisis. According to a recent estimate by World Bank, Bangladesh's Gross Domestic Product (GDP) is now expected to grow at about 1.6% in the current financial year, and 1% in the next fiscal year. The government has now relaxed the country-wide lockdown to augment the economic activities, though we are also witnessing an increase in coronavirus positive cases.

During the Covid-19 period, food security has become a critical issue especially since the lockdown started. The rapid surveys[1] conducted during the lockdown period also find that Covid-19 led to a drastic increase in food insecurity, which appears to be dispersing rapidly into groups that were formerly food secured. Help from the government or NGOs were very negligible. Food insecurity along with job loss seems to have traded with illnesses and virus-related deaths. While the lives versus livelihood debate continue, we take a look at the economic activities following the withdrawal of the lockdown.

Measuring economic activity for such a short period is not easy. There is also a lack of reliable and real-time data to measure them directly, not least for an economy with a large informal sector. We provide an alternative approach to understand GDP estimates based on electricity generation and consumption, especially when there is a lack of real-time data. We apply this approach to gain an understanding of the economic activities following the relaxation of the lockdown. We show this in the current context but it can be applied for any period. We use a method proposed by Kaufmann and Kaliberda (1996) in a World Bank Research Paper.[2] Our approach can be seen similar to the method using Night-time lights satellite imagery to derive a measure of GDP.

The idea behind our proposed approach is to identify a simple but important factor of production that can reasonably proxy the level of GDP. We consider electricity generation (or consumption) one such factor. As it is difficult to obtain the real-time data of all traditional

[1] See for example, the study on Determinants and Dynamics of Food Insecurity During COVID-19
[2] Policy research working paper; No. WPS 1691

factors of production (e.g., capital, labor, etc.) which determine the GDP, we use the readily available electricity data provided by the Power Development Board.

First, we test the validity of our proposed method in the context of the Bangladesh economy. To do so, we use previous data (FY 2007-08 to 2018-19) on GDP and electricity generation and estimate the electricity production for past years. We found a very high degree of correlation (0.99) between our estimates and actual production (see Chart 1), which indicates electricity data can be used to predict economic activities and measure economic growth.

Now, to understand the recent trends in economic activities, we observe the average daily highest generation of electricity in the first six months during 2017-2020 (up to 22 June for the current year; see Chart 2). The year-to-year generation of electricity shows a predictable pattern, which rises in summer. However, we observe a sharp decline in electricity generation from March to April, the first month since the lockdown. The electricity generation started to rise slowly in May when the government eases the restrictions for various sectors. But, the negative gap in the generation between 2019 and 2020 remain stable until the end of the lockdown. Even after the lockdown, if one considers the growth in electricity generation in the previous years, one would expect a higher generation in the current year compared to the previous year, which is not the case. Thus, we still observe a decline in economic activity compared to the previous year despite allowing economic activity to function. Note we have already mentioned that the daily electricity production can be used as a good proxy for the level of GDP.

Let's move on to the daily figures of total electricity generation throughout the pre-, during- and post-lockdown periods. We have compared these electricity data with the preceding two years, 2019 and 2018 (see Table 1). As expected, during lockdown the total electricity generation (including import) reduced by 29.5 million kWh (hereinafter mkwh) per day in April and 43.4 mkwh per day in May 2020 in comparison to 2019. On the contrary, during the same period, electricity generation had increased by 27.63 mkwh and 46.09 mkwh in 2019 compared to 2018. This downward-trend is continuing even after the ease of restriction, a negative gap (-4.66 mkwh) is evident in the first 16 days since the lockdown ends on 31 May 2020. Whereas, a positive gap of 28.61 mkwh was evident between 2019 and 2018.

These figures indicate, even after easing the restriction, the economic activities, based on the electricity generation and consumption, have not picked up significantly. If we examine the demand for electricity during the same period, a similar trend is evident.

Now, we can use the 'loss' of electricity production to estimate the economic loss associated with the Covid-19 pandemic (see Table 2). As per our estimate, during the general holiday for 66 days (March 26-May 30), daily economic loss was BDT 26.56 billion in nominal term and BDT 11.01 billion in the real term. If we assume the economy is functioning as per plan beyond this period, then the economic growth is expected to be 1.63% in the current fiscal year 2019-2020. Thus, our estimate is quite close to the estimations provided by various other organizations, such as the World Bank and Economic Intelligence Unit.

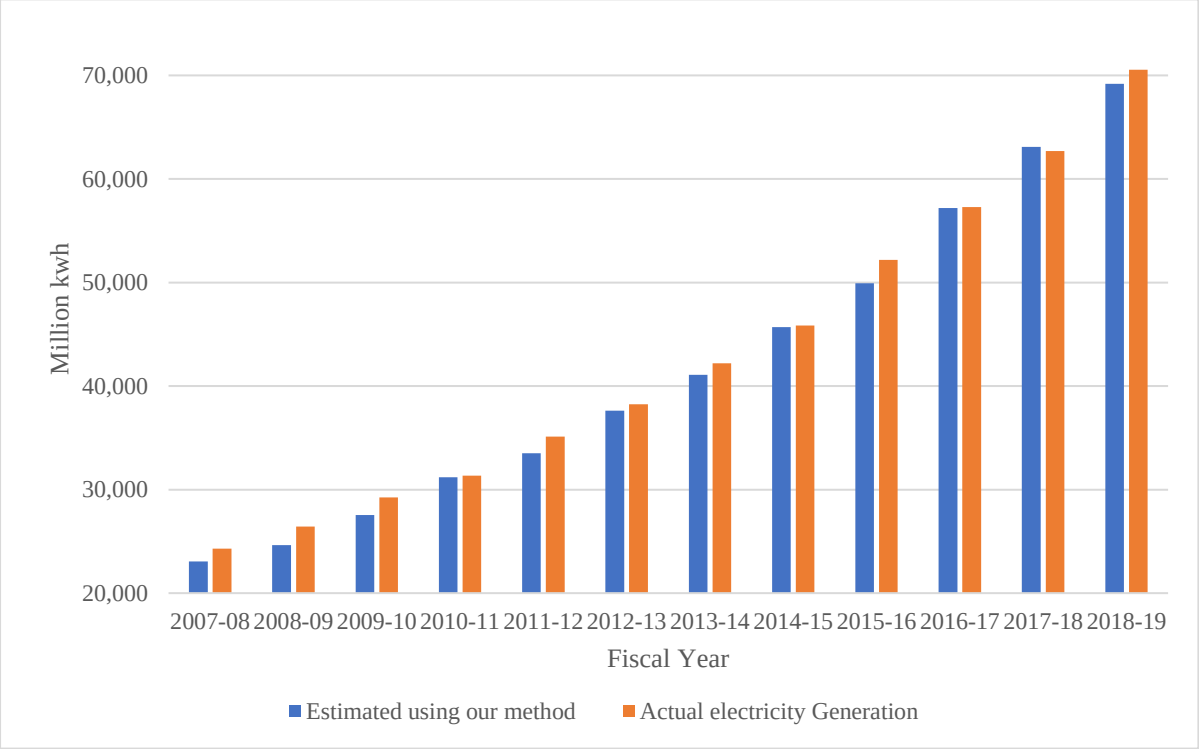
If we calculate the GDP of the first 23 days after the lockdown, we still observe that a significant share of economic activity is missing. The production and demand for electricity are still lagging. Our estimates show that every day we are losing around BDT 10.98 billion in terms of nominal GDP and if this trend continues, our real GDP growth will cut down further to 1.30% for this current fiscal year (see Chart 3 for the daily electricity generation trend).

These estimates show that we need to think more about the decision of opening up the economic activities as there are other costs due to Covid-19 positive cases in addition to the inevitable economic losses. Our hospital system is grossly underprepared and oversaturated with the Covid-19 patients at present. There is doubt how long the system could sustain if the current pressure continues. However, successful case studies exist around the world; many countries were able to contain the virus and manage the cases within about 3 months after an effective lockdown was imposed, including in many developing countries with similar GDP per capita as ours. We also need to think about longer-term implications; if we can't control the Covid-19 cases the economy will not recover, and both exports and domestic demand will suffer.

Previously, we have documented that feeding 50 million poorest for the next six to twelve months is possible using our existing resources. Our earlier research suggests that people from poorer sections have access and use informal borrowing and lending to cope with economic shocks, especially those living in rural areas. But in a situation like this when everyone is affected coping through social ties becomes more difficult. However, voluntary contributions from affluent households to their poor people are also commonly evident during the crisis, and we could mobilize more with contribution from the relatively well-off people. Our economic performance in the recent past should give us enough courage to make a bold step to provide generous transfers for the poor. Overall, we have the resources and capacities which we need to manage efficiently and fairly. We could improve our management in dealing with both economic and health crises. We can then come out stronger in both health and economy-wise.

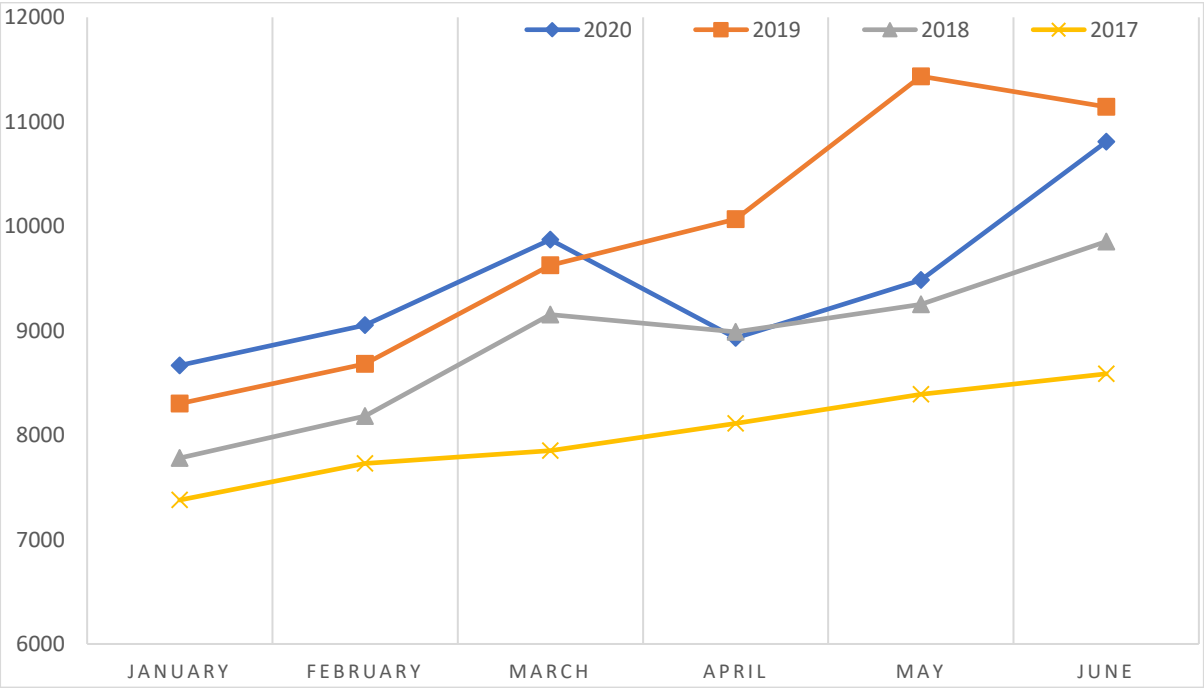
Infographic materials

Chart 1: Estimated vs actual electricity generation during FY 2007-08 to 2018-19



Source: Estimation based on Bangladesh Economic Review

Chart 2: Monthly average of daily highest electricity generation, 2017 to 2020



Source: Bangladesh Power Development Board

Table 1: Average Electricity Generation per day

(all figures in million kilowatt-hours)

	Dates	2020	2019	Gap (2020-2019)	2018	Gap (2019-2018)
Avg TEG pre-lockdown	Mar 1-Mar 25	193.45	188.93	4.52	187.73	1.20
Avg TEG during-lockdown	Mar 26-Apr 30	176.80	206.27	**-29.48**	177.61	28.66
	May 1- May 30	187.86	231.30	**-43.44**	184.54	46.76
Avg TEG post-lockdown	May 31- Jun 30	223.93*	228.59	**-4.66**	199.98	28.61

*Source: Bangladesh Power Development Board; Note: *up to 22 June 2020.*

Table 2: Economic loss during and post-lockdown

Date	Days	Nominal GDP loss/day	Real GDP loss/day	GDP growth	Other Estimates
Based on Expected GDP/kWh					
March 26 to May 30 (lockdown)	66	BDT -26.56 B	BDT -11.01 B	1.63%[1]	WB – 1.6%[3] IMF – 3.8% EIU – 1.6%
May 31 to June 22 (Post-lockdown)	23	BDT -10.98 B	BDT -4.55 B	1.30%[2]	Not available

Note:

1. We are assuming the economy was doing as planned until 25 March 2020 and this assumption is supported by the electricity consumption pattern that is similar to the previous year.
2. Annualized real GDP growth rate if the current level of economic activities continues
3. World Bank forecasts only 1.6% GDP growth for Bangladesh

Chart 3: Daily total electricity generation from March 1 to date (2018, 2019, 2020)