Macroeconomic Consequences of a Lockdown and Its Policy Implications

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The unprecedented lockdown has pushed economies into dire straits and also raised hopes that they would soon rebound to the old normal as soon as the pandemic is contained. But this is unlikely as the deterioration in the resource position and slump in demand can be reversed only by discarding the usual macroeconomic framework and by using a different approach and implementing out-of-the-box solutions. This analysis enables us to understand what policies may or may not work during and after a lockdown and the role of a stimulus and its magnitude.

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The ongoing pandemic has left economies around the world in dire straits. To slow down its spread, countries have had to implement lockdowns that suddenly halted production. In India, not even 25% of the economy could function during the lockdown (Kumar 2020a), producing only the most essential goods and services. So, the rate of growth was -75% compared to the same month last year. Consequently, businesses have lost incomes and a large number of workers have lost work and/or did not receive wages (*Indian Express* 2020). Many of those still employed have faced cuts in wages. Business losses are a result of plummeting revenue while fixed costs have to be met.

Businesses have been arguing for an end to the lockdown. It is implicit that this would lead to more deaths, but this is taken as a necessary cost. They have asked for concessions to increase their profitability, like relaxation in labour laws and have lobbied for cash assistance to cut their losses.

The issue is posed as life versus livelihood. It is argued that if workers do not have work and incomes they will anyway starve. But if COVID-19 spreads faster, it will be the marginalised sections that will bear the brunt since the well-off may be able to protect themselves better. But the disease has not spared even the highest in the land, like in the United Kingdom, where Prime Minister Boris Johnson contracted the disease. India would be no exception to this.

The dilution of labour laws will only aggravate the economic problems. It will not help revive businesses but worsen the plight of labour. Their terrible conditions of living are the root of the inability of the country to properly implement the lockdown and to control the spread of the disease (Kumar 2020d).

The Confederation of Indian Industry (CII) has argued for a stimulus of 7.5% of the gross domestic product (GDP) (*Business Today* 2020). The United States (US) is quoted as an example of a country providing a huge stimulus of $3 trillion, which is 15% of their GDP. Kumar (2020e) has argued that a stimulus would not work during a lockdown when businesses are closed. Further, can India go in for such a stimulus, given its weak fiscal situation even before the pandemic hit the economy?

The issue is: What needs to be done during and after a lockdown? To address these issues, given that a modern economy has never faced such a situation, there is a need to think out of the box. The government and many of the experts are analysing the situation as if the economy would rebound to the old normal, prevailing in January 2020. Is this likely after a lockdown and given that production cannot resume like earlier due to need

for physical distancing and decline in productive capacity of the economy?

Kaleckian Framework

Kalecki (1971) had given a macroeconomic framework for the short-run analysis of a capitalist economy using the circular flow of incomes and expenditures. The economy is taken to consist of two classes—workers and capitalists. Like in Keynes (1936), the analysis pertains to the short run with given expectations (for investment). He also incorporated causation from expenditures to incomes to draw policy conclusions. This framework was modified in Kumar (1988) to explicitly incorporate the government and in Kumar (1999) to integrate the black economy.

For a closed capitalist economy, Kalecki derived the following national income identity, incorporating the two classes and government:

$$P - T_p = C_c + I + \text{(Fiscal Deficit)} \quad \ldots (1)$$

Subscripts *p* and *c* stand for profit and capitalists, respectively.

The causation goes from right to left, that is, from expenditures to incomes.

Government stands for all tiers of government and the entire public sector.

In equation (1) it is assumed that the workers do not save and they consume their entire post-tax income. So, the terms for workers' income and consumption drop out.

Kumar (1988) expanded equation (1) to bring in government policies explicitly and separate the public sector from the private sector. This removed the double counting in equation (1). So, the identity became:

$$\{P_p + \text{Int.} - T_{p\}} = C_c + I_p + \text{(Fiscal Deficit)} \quad \ldots (2)$$

The *Fiscal Deficit* was itself expanded to include expenditure and revenue in the budget and is presented later in equations (6) and (7). This equation was used to study the impact of government policies in a capitalist economy.

Three Periods

A lockdown is a shock to the economy that changes the short period. The period after the lockdown is lifted, constitutes another short period. So, there are three periods to be considered:

(1) Pre-lockdown
(2) Lockdown, and
(3) Post-lockdown.

Kalecki uses a short-term analysis so as to freeze expectations. The lockdown and the post-lockdown period can be considered as self-contained since their start is marked by a shock to the economy which delinks them from the period 1. For periods 2 and 3, expectations about the future are frozen since there is no fresh investment.

The framework presented in equation (2) can be used to analyse these periods. Period 1 becomes the benchmark for comparison with what transpires in the subsequent periods and since it is well understood, it is not presented here (Kumar 1999). The analysis also enables us to understand what policies may or may not work during the latter two periods.

The latter two periods are first formulated and then compared with the pre-pandemic period to understand the change. This also enables analysis of possible government policies in the new situation, like the role of a stimulus and its magnitude.

To capture the lockdown, cessation of production and stoppage of wage payments, the identity (2) needs to be expanded to its original form with wages and workers' consumption shown explicitly. Further, since there is a large unorganised sector in India, workers' income and tax on it needs to be split up between these two categories of workers. Now, equation (2) in its full form with the separation of unorganised and organised sector workers can be written as,

$$\{P_p + \text{Int.} - T_{p\}} + [(W_o - T_o)] + [W_u + S_u] = C_c + I_p + C_o + C_u + \text{(Fiscal Deficit)} \quad \ldots (3)$$

Subscript *o* stands for organised sector and *u* for unorganised sector. In the case of the advanced capitalist countries, *u* stands for the unemployed. The income of the unorganised sector workers is below the taxable limit so there is no tax on it. They get a subsidy S_u. For simplicity, assume that no one else gets a subsidy. *Int.* stands for interest paid by the government, which goes to the savers, from whom the government borrows and since the profit earners are the only savers, they are the ones who get all of it.

In normal circumstances, in a capitalist economy, it can be taken that the two terms in the square brackets, the net incomes of the workers, equal their consumption C_o and C_u. That is, it can be taken that workers do not save. That gets us back to the identity (2).

Impact of Lockdown

Characterisation: (i) The most important aspect of lockdown is that production of both goods and services is severely curtailed.

(a) Except for the essentials, all other production comes to a halt. Production continues in agriculture and the very basic essentials, like, medical and some fast-moving consumer goods (FMCG). There is minimal trade and transportation and administration.

(b) Capacity utilisation in non-essential sectors falls to zero. Like, for automobiles.

(c) Even for essentials production declines below full capacity due to supply bottlenecks.

(d) In agriculture also, production of perishables fall due to decline in demand.

(ii) Employment falls dramatically. This is indicated by the dramatic rise in social security payments in the US and the increased demand for work under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in India.

(iii) Due to low capacity utilisation across businesses, fresh investment becomes zero.

(a) In the public sector investment falls due to budget constraints.

(b) In the private sector, working capital is being exhausted, reserves are being used up (dissaving) and depreciation is taking place so investment becomes negative.

(iv) Households dissave since their incomes decline (in the organised sector) or become zero (due to unemployment in

both organised and unorganised sectors) while consumption of essentials has to continue.

(v) Prices soften due to excess supply, except in the case of essentials. All commodity prices fall due to lack of demand. But they rise in urban areas due to shortages and hoarding. Agriculture prices fall at the farm level due to shortage of demand but rise in urban areas.

(vi) Overall, there will be tendency for deflation in the economy.

These features can be plugged into equation (3) to study the impact of lockdown on the macroeconomy. From the above it is clear that all variables in the equation decline sharply, except the *Fiscal Deficit*. First, the general case for a capitalist economy is discussed and then the Indian case.

Output Freezes

Immediately after lockdown, most production stops. Even though capacity exists, production cannot take place. Production in the pipeline becomes inventory whose cost mounts.

- So, output, $Y = Y_l << Y_f$. Where l stands for lockdown and f for capacity
- Correspondingly profits and wages come down drastically
- So, profits become $P_p = P_{pl}$.
- Wages also come down. *So,* $W_u = o$, and $W_o = W_{ol}$.

Incomes Fall

- W_{ol} will drop sharply due to wage cuts and unemployment.
- W_u will drop to zero due to closure of businesses.
- P_{pl} will be constrained because production is substantially reduced and businesses run at a loss due to cessation of activity, while interest and loans have to be repaid and fixed costs continue.

There will be profiteering in essentials by trade, which will generate black incomes, but this will be much less than what was generated prior to lockdown. For simplicity, it is assumed that black income generation is zero.

Prices

- Due to a sharp fall in demand, all commodity prices will fall. Petro goods are an example.
- Except for sectoral prices, where there may be spikes due to shortages, prices will fall so that there will be a tendency for deflation rather than inflation.
- Further during lockdown, the consumption basket is limited to essentials and their prices rise in urban areas but fall in the rural areas (Kumar 2020c). Since the consumption basket will contract to the essentials, only their prices need to be considered for measuring inflation. In the aggregate they are taken to fall.
- Post-lockdown, due to need for physical distancing and other precautions, costs will rise and production cannot go back to full capacity for most lines of production, like for travel, tourism and sports. This will tend to soften the decline in prices post-lockdown.

Consumption Sharply Down

- Due to decline in property prices, there will be a wealth effect, so C_c will drop.
- C_o and C_u will be down and restricted to consumption of essentials. Consumption of discretionary items will be postponed and will fall drastically.
- C_u will be entirely based on transfers (S_u) from the government.
- In India, the unorganised sector will close down and since it employs 94% of the workforce, C_u will remain large even though much less than before the lockdown.
- In the aggregate, consumption will decline drastically during lockdown and will only pick up gradually after lockdown.

Investment and Dissaving

- Due to shortage of resources with the government, I_{pub} will decline and will be negligible during lockdown and pick up gradually after the lockdown.
- Due to huge unutilised capacity, new investment by private sector will be zero during lockdown and post-lockdown.
- As working capital is consumed by the cottage sector and it gets eroded for the organised sector, investment will turn negative. I_{pvt} will become negative.
- As incomes of all sections drop, savings will fall.
- Only those sectors that continue to function will show some savings.
- Businesses that are closed will use reserves and will dissave.
- Banks, the creditors for businesses, will dissave since they will pay interest to their depositors but will not receive the interest due to moratorium on repayment.
- Workers losing work will have no income but will continue to consume, so, they will dissave.

Revenue of Government

Revenue of Government = Tax Revenue + Non-tax Revenue.

$$\text{Tax Revenue} = T_p + T_o + T_i \quad \ldots (4)$$

(i) T_p will fall substantially as P_p falls. Most of the businesses will run at a loss for the year.

- T_o will fall nearly to zero because of loss of employment and cut in salaries everywhere.
- T_i, the indirect tax collection will drastically fall as production declines and especially of inessentials that are in the higher tax brackets. Most production will consist of the essentials and they pay either zero tax or a low tax rate.
- So, the tax/GDP ratio will fall. In India, it will fall from 16% in 2019/20 to 8% or less (Kumar 2020c).
- Since both GDP and tax/GDP ratio will fall, revenue will fall sharply.

(ii) Non-tax revenue will also fall. In India, it will be substantial.

Budgetary Expenditures

Expenditures are on salaries, public investment, purchases and transfers, like subsidies, interest payment to borrowers and now to the unemployed for their survival. So,

Expenditure = Interest payment + Salaries + Investment + Subsidies + Other transfers and purchases … (5)

- Interest payment and salaries are committed expenditures.

• Defence expenditure is treated as a holy cow, so it is difficult to curtail.
• Social sector expenditure and public investment are usually cut.
• Subsidies S_o and S_u will rise substantially to help the unemployed.

Fiscal Deficit

Fiscal Deficit = Expenditure – Revenue.

Expenditure = Interest (Int.) + Salaries (S) + Public Investment (Inv) + Subsidies (S_u + S_o) + Miscellaneous expenditures and transfers (M) … (6)

Revenues = (T_p+T_i+T_o)

So, Fiscal Deficit = (Int+S+Inv+M+S_o+S_u-T_p-T_i-T_o) … (7)

Given (i) the budgeted expenditures, (ii) the steep rise in subsidies to workers and (iii) a sharp fall in all taxes, the *Fiscal Deficit* will rise dramatically, unless the planned expenditures are cut back.

Analysis of Lockdown

Putting in equation (7) explicitly in equation (3), it can be written as

$$\{P_p + Int - T_p\} + [W_o+S_o-T_o]+[W_u+S_u]$$
$$= C_c+I_p+C_o+C_u+\text{Fiscal Deficit}$$
$$= C_c+I_p+C_o+C_u+(Int+S+M+Inv+S_o+S_u-T_p-T_i-T_o) \quad \ldots (8)$$

In a lockdown, all the variables fall drastically compared to the pre-pandemic level, except the budgeted *Int*., *M* and *S*.
Further, S_u and S_o will rise dramatically to fund worker's consumption.
W_u falls to zero, so that the entire consumption of the unorganised sector will be out of subsidy.
So, $S_u = C_u$

For simplicity assume that the organised sector workers also consume their entire net income.

So, due to lockdown (8) becomes,

$$\{P_{pl}+Int-T_{pl}\}+[W_{ol}+S_{ol}-T_{ol}]+[S_{ul}]$$
$$= C_{cl}+C_{ol}+C_{ul}+(Int+S+M+Inv+S_{ol}+S_{ul}-T_{pl}-T_{il}-T_{ol}) \quad \ldots (9)$$

Subscript *l* stands for lockdown.

Causation runs from expenditures to incomes so from right to left in the equation.

In normal times, in period 1, a rise in the *Fiscal Deficit* leads to an increase in demand leading to an increase in private sector profits (P_p) via an increase in the economy's income *Y*.

But lockdown changes the result.

Y will fall precipitously to Y_l and so would P_p to P_{pl}.

Assume that the budgeted expenditures on salaries, interest payment, etc, remain unchanged.

(i) The *Fiscal Deficit* rises sharply, because subsidies S_u and S_o rise and, all taxes fall on profits, incomes and indirect taxes. But subsidies and taxes (except T_i) are matched on the right-hand side, so they will not lead to an increase in P_{pl} and have no effect on output (*Y*). So, this part of the massive rise in *Fiscal Deficit* will have no impact on output of the economy.

(ii) The *Fiscal Deficit* will also rise substantially due to fall in T_i. This is not due to cut in tax rates, but rather due to stoppage of production and reduction in profits. So, it would not lower prices and boost demand. So, output would not rise.

(iii) Demand will fall in the economy due to the big fall in private investment and consumption. I_{pl} (=*o*), C_{cl}, C_{ol} and C_{ul} fall sharply compared to the pre lockdown period. So, this would counter the increase in the *Fiscal Deficit* and overwhelm it, leading to a fall in overall demand and, therefore, to a fall in output in spite of the big increase in the *Fiscal Deficit*.

(iv) Government can increase its investment. The *Fiscal Deficit* would rise but its impact on output will be limited by the cap on $Y = Y_{fl}$.

(v) Government can cut tax rates and try to boost incomes. This will raise the *Fiscal Deficit* but only the indirect rate cut will have an impact on demand.

Combining these results, during lockdown,

(i) There will be a huge rise in the fiscal deficit. But, overall, demand would fall so output in the economy will not rise.

(ii) So, the automatic stabilisation role of the fiscal deficit will be nullified. But, if adequately funded, it can enable the unemployed to survive.

(iii) If a stimulus is attempted via transfers to businesses, it would increase the fiscal deficit but will not boost output. It may help them reduce loses during lockdown.

(iv) Cut in tax rates will also increase the deficit but it will not boost output since consumption is restricted to essentials.

(v) Finally, an increase in government investment will lead to a limited increase in output, given the capacity constraint due to lockdown.

Financing the Deficit

The huge fiscal deficit would have to be financed either through increased taxes and/or borrowings.

(i) If indirect taxes (T_i) are raised, prices, which are softening due to decline in demand, will fall less and demand will further decline.

(ii) Increase direct taxes (T_p and T_o).

Due to closure of businesses, most businesses will run into losses for the year as a whole. Those that are highly leveraged will fail, including in the finance sector.

So, $T_{pl} << T_p$

Due to job losses in the organised sector and salary cuts, raising T_{ol} will be difficult.

So, very little revenue can be raised here.

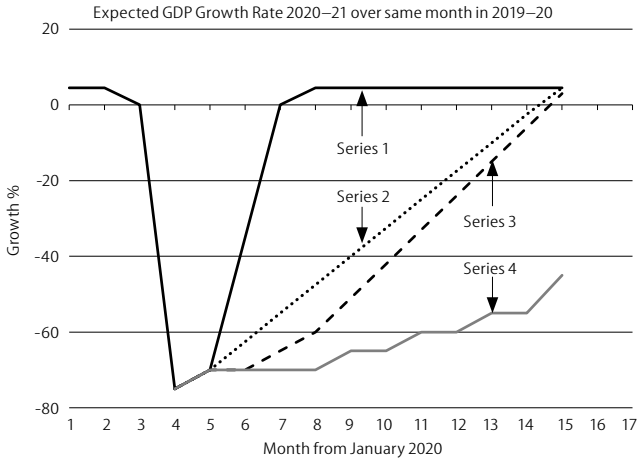
(iii) Increase wealth tax.

This will be difficult since all asset prices will drop. To pay wealth tax, while current incomes fall, the wealthy would have to liquidate property and that will make asset prices drop further. This would lead to a further collapse in businesses and a further decline in the investment (I_p) by the private sector in subsequent periods.

(iv) Borrowings—only source.

Borrowing can be from the central bank (Reserve Bank of India [RBI]) and the markets. In the markets, borrowing can be from the financial sector (carrying excess liquidity) and the wealthy. For this purpose, bonds may be floated. But given the

Figure 1: Trajectory of the Indian Economy during 2020–21 under Different Assumptions



Following assumptions are made in drawing the graphs:
In March, growth is 0%; in April -75% and in May -70% compared to same month in 2019.
During recovery, it is assumed that there is a steady rise.
Assumptions underlying the different trajectories and the average rate of growth in 2020–21.
Series 1: V shaped recovery after two months and back to January 2020 level in four months.
Average: -12%
Series 2: U shaped recovery after two months and back to January 2020 level in one year.
Average: -36.08%
Series 3: U shaped recovery after four months and back to January 2020 level in one year.
Average: -42.33%
Series 4: U shaped recovery after four months and back to January 2020 level in two years.
Average: -63.33%
Dots at the end give the average for the year for each of the lines.

collapse of wealth and limited amount of funds with the financial sector due to dissaving, most of the funds will have to come from the central bank through the monetisation of the deficit.

Post-lockdown

Some sectors that had stopped production will start operations gradually. But demand will not revive any time soon due to the impact of lockdown. Some analysts have forecast a "V-shaped" recovery because of pent up demand (PTI 2020; *Business Standard* 2020). Figure 1 shows the trajectory of the economy under different assumptions. Only the most optimistic one, with immediate recovery, is a V-shaped graph; others all show a shallow U-shaped recovery.

Y_f will be redefined due to need for physical distancing in production. So, the full workforce cannot be deployed in factories and offices. In some sectors, work can be done from home but such work is not yet a large component of the total economy. Primary sectors like agriculture and forestry can continue at full capacity since they are in open areas, but their contribution to GDP is small.

Finally, there is likely to be business failures (Kumar 2020b). *Businessline Bureau* (2020) quotes the Confederation of All India Traders (CAIT) as saying that up to 30% of retailers are likely to fail. Saluja (2020) quoting All India Manufacturers Organisation (AIMO) says that 35% of small businesses may shut shop. So, for quite some time, the pre-pandemic level of output may not be achieved. Costs of doing business will rise due to physical distancing and other precautions taken. Further, there may be labour shortages leading to an increase in wages for industry. But input costs will decline due to the fall in commodity prices and demand will be low so that raising prices will be difficult. Thus, there will be pressure on profits and business failures. This will be accentuated by the shortage of working capital, exhausted during the lockdown.

Except for sectors producing essentials, new investment will remain nearly zero.

Consumption demand will remain muted because:
(i) Due to wealth effect, the well-off sections will consume less than their earlier levels.
(ii) Those that have suffered unemployment and those whose salary has been cut will not increase consumption any time soon.
(iii) The employed (even with wage cut) are now fearful and uncertain about the future, so consumer sentiment will remain weak and they will buy less of discretionary items. Demand for many services will be weak, like for tourism and entertainment.

So, post-lockdown, with both consumption and investment down, there will be lack of demand and production cannot be ramped up immediately and there will only be a very gradual recovery (Figure 1).

Equation (9) can be used with l now signifying the post-lockdown situation

$$\{P_{pl}+Int-T_{pl}\} + [W_{ol}+S_{ol}-T_{ol}] + [S_{ul}] = C_{cl}+C_{ol}+C_{ul}+(Int+S+M+Inv+S_{ol}+S_{ul}-T_{pl}-T_{il}-T_{ol}).$$

Incomes and tax collections will rise compared to the lockdown period but will remain much lower than in period 1.

Impact on Fiscal Deficit

(i) Given the gradual recovery, government support to the unemployed will have to continue so that government expenditures will continue to be at high levels.
(ii) Revenues will begin to rise gradually.
(iii) Indirect tax collection (T_i) will rise as production increases but due to lower levels of output during the year as a whole, it will be much less than in period 1.
(iv) Income taxes (T_p and T_o) will be much less than in earlier period since most businesses will incur a loss for the year and many may fail. Further, most salaried employees having suffered cuts in incomes will pay less tax than earlier.
(v) Fiscal deficit will decline but remain high for the year as a whole, compared to earlier years.
(vi) The boost in demand in the economy due to the fiscal deficit will tend to decline but the increase in consumption will be larger than this decline. So, output will rise.
(vii) Y_f will be redefined so that the output in the post-lockdown period will be less than in period 1.

India in 2020–21

The above framework can be used in the Indian case to understand what the government can do.

As argued in Kumar (2020c), at an optimistic guess, even if the economy recovers in one year, GDP is likely to decline from ₹204 lakh crore in 2019–20 to ₹130 lakh crore in 2020–21.

Expenditures

• Workers who lose employment will have zero income. Because they have no savings, they need to be supported with the government providing them essentials of life.

• A majority of the workers in the unorganised sector and many in the organised sector have lost work. Even in the primary sectors, where activity can continue, there is reportedly loss of income (*Indian Express* 2020; CSE 2020).

• If these workers are given half the World Bank extreme poverty line income ($1.9 calculated at ₹75 to the dollar) for one year, then to support 50% of the population that has slipped below the poverty line, with zero income, will cost the government ₹18 lakh crore in the full year.

• Subsidies to the poor and schemes like Pradhan Mantri Ujjwala Yojana and MGNREGA can be absorbed in this. Even then, an additional expenditure of ₹15 lakh crore would be required.

• An additional expenditure on medical expenses and building health infrastructure will be needed and this may cost ₹2 lakh crore for the full year.

• Support to businesses may be needed and that can come from the moratorium on repayment of interest and loans. But this would require support to the financial sector from the government and the RBI. So, a little amount may immediately be required from the budget. This along with additional administrative expenditures to tackle the pandemic may together require say, another ₹1 lakh crore.

• All this will add up to an additional budget expenditure of ₹18 lakh crore.

• This is the "survival package" (Kumar 2020c). It would be about 14% of GDP.

• But the present government package is only ₹2 lakh crore which is 1.5% of GDP.

Revenues

• In India, for the year as a whole, GDP will fall by 37% at an optimistic guess (Figure 1). Kumar (2020c) argued that the tax/GDP ratio will fall from 16% to 8% and the tax revenue will fall to 33% of revenue collected in 2019-20.

• Non-tax revenue will also fall drastically since (i) public sector will run into losses and will contribute much less to the exchequer, (ii) there will be delay in auction of spectrum, etc, and (iii) disinvestment will be infeasible. So, it will contribute little to revenues.

Total revenue will fall from ₹36 lakh crore in 2019–20 to ₹10.5 lakh crore in 2020–21, that is by 19.6% of 2020–21 GDP.

Fiscal Deficit

• The fiscal deficit will go up by 21% (1.5% additional budgetary expenditures + 19.6% decline in revenue) of GDP, *ceteris paribus*.

• The fiscal deficit estimated for 2020–21 was about 10% of GDP, including for the centre, states and public sector. With the lower GDP, this would become 15.5% of GDP, *ceteris paribus*.

• So, the fiscal deficit will become 36.5% of GDP.

• Of this, the budgeted fiscal deficit of 15.5% and the 1.5% additional budgetary expenditures announced will act as stimulus, while the rest will not give a boost to the economy (as argued earlier). Reduced indirect tax collection of about 10% of GDP due to curtailment of production will also not boost demand.

• The decline in private investment (to zero from 27%) and consumption (say, 37.5% of 60% = 22.5%) will lead to a fall in demand of 49.5% (calculated from Table 1).

Table 1: GDP and Its Macro Aggregates at Current Prices for 2017–18

	Amount in ₹ Crore	% of GDP
GDP	1,70,95,005	
Private final consumption	1,00,83,121	58.98
Gross capital formation	50,70,703	29.66
Government total expenditure	21,89,892	12.8
Government captal formation	4,53,579	2.65
Subsidy	3,51,614	2.05
Current transfers	5,16,152	3.02
Salaries, etc	5,85,722	3.43

Source: National Accounts Statistics, 2019.

• So, in spite of the fiscal deficit of 36.5%, demand will be short and output will fall.

• If ₹18 lakh crore is given as subsidy to the newly unemployed and the poor, the fiscal deficit will go up by 14% and not 1.5% of the GDP. So, the fiscal deficit will become 49% of GDP and the demand increase will be by 29.5%. This will still be much less than the decrease in demand due to fall in private consumption and investment.

• So, output will still decline but by less. Therefore, transfers to the unemployed will be beneficial.

• The centre's budgeted expenditures for 2020–21 is ₹30.42 lakh crore, but the revenue of centre and the states will be only ₹10.4 lakh crore.

• So, there will be a shortage of resources to pay interest, salaries, meet defence expenditures and pay for the lockdown- and COVID-19-related expenditures.

• The states will not only lose revenue but also statutory transfers from the centre (which is 42% of gross tax collections) will decline drastically. They will also not be able to meet the budgeted expenditures

• So, both the centre and the states will have to initiate a drastic cut in all expenditures other than the "survival package" (Kumar 2020c) if the fiscal deficit is to be brought down.

The huge fiscal deficit (49% of GDP) will have to be monetised and that will raise currency with the public. Due to uncertainty, people will increase their holding for precautionary motive and speculative motive. Thus, the velocity of circulation of money will decline. Further, due to increased leakages from the banking system, the money multiplier would decline and money supply will contract. Transactions in the economy will also decline as output falls.

Consequently, the central bank's actions like cutting interest rate (even when transmission works), reducing CRR and increasing liquidity will have little impact on output. This reminds us that money by itself is not a resource, it only enables incomes to be earned but that is constrained during lockdown and post lockdown.

Conclusions

The paper points out the misconceptions about what policymakers can achieve with the usual fiscal-monetary policies during and after a lockdown. This is a result of using the usual macroeconomic framework in an unusual situation

which requires a different macroeconomic approach, as presented here.

It is pointed out that the lockdown may be temporary but it severely constrains output and changes the dynamics for the subsequent period. Even after the lockdown is lifted, the economy would not recover to its pre-lockdown position. The recovery, even if it occurs, would take long, since the lockdown adversely affects employment, consumer sentiment and capacity utilisation. Private investment turns negative due to business failures and because all economic actors dissave—households, businesses and government.

During lockdown, workers, factories, machines and offices exist but production capacity is redefined due to requirement of physical distancing. This leads to a deterioration in the economy's resource position and it cannot do what it could do during earlier times.

The paper shows that due to the sharp decline in consumption and investment during the lockdown, private sector demand collapses and this continues post lockdown. The only source of additional demand to counter this decline in demand is the government in its wider sense. It is argued that due to a dramatic fall in output, revenues will fall while expenditures rise both due to COVID-19 and unemployment. So, in India, only if the fiscal deficit enlarges to 36.5% of GDP, will it lead to an increase in demand. Other analysts do not factor in the sharp fall in GDP and in tax revenue so they do not report such a sharp rise in the fiscal deficit.

But, the paper points out that even such a sharp, unheard of level of the fiscal deficit (36.5% of GDP) is inadequate to boost the economy since it is mostly due to transfers and reduction in tax revenue due to decline in output. So, the automatic stabilisation role of fiscal deficit is inadequate to boost the economy—the stimulus effect (17%) will be small compared to the decrease in the private sector demand (49%).

It is pointed out that, as yet, the relief package announced by the government is inadequate to meet the requirements of survival of the unemployed. Another 12.5% of GDP would be needed to fund that. The fiscal deficit then would become 49% of the GDP and the stimulus would be 29.5% of GDP.

At such a high deficit, the government will not have the resources to spend on the budgeted expenditures, like salaries. In fact, the budget presented last February has become redundant. The financing of such a huge deficit would be an issue. It would have to come mostly from printing of notes by the RBI. But the usual monetary policy will not work and the economy would be in a liquidity trap. Interest rate cuts or infusion of additional liquidity by the central bank will not have the impact they had in normal times. This points to the fact that money is not in itself a resource since during lockdown work and incomes decline.

The problem in India is more acute than in the advanced countries. As argued in Kumar (2020b), most Indian businesses are micro and small units and they collapse quickly and retrench workers. So, India is unlike the advanced countries where the unorganised sectors are negligible and the economy can respond to a stimulus differently than in the case of the developing world. The productive capacity is not destroyed there as much as it is in India with a large number of likely business failures. Further, labour does not migrate back to the villages in the advanced countries and is available near the production centres when the economy restarts. So, the supply shock can be mitigated more easily in the advanced countries than in India.

The simple point is that in India, both the fiscal stabiliser and the package announced are inadequate since economic activity largely stopped during the lockdown leading to a collapse of demand. This and structural factors are an impediment to an economic recovery.

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