

State of capacity utilization in Indian manufacturing

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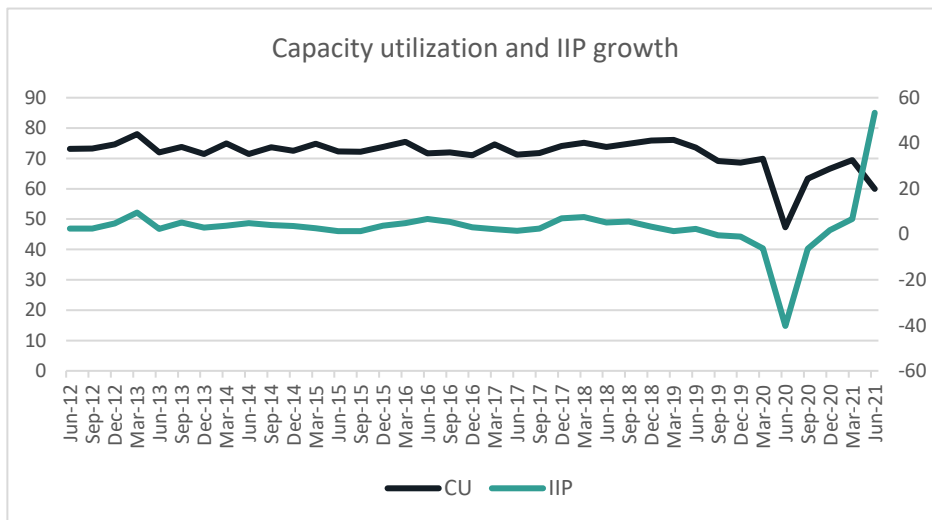
In the credit policy address, the Governor of RBI had stated that capacity utilization (CU) in the manufacturing sector, which declined sharply in Q1:2021-22 under the second wave, is assessed to have recovered in Q2 and further improvement is expected in the ensuing quarters. The Ministry of Finance has also indicated in its latest economic report that the economy is back on track with several lead indicators reflecting this traction. This is good news as the capacity utilization rate holds the clue to future investment. In Q1 of the current financial year the utilization rate declined to 60% after recovering to 69.4% in March 2021. Against this background the foregoing analysis examines the relation between capacity utilization rate and growth in manufacturing as per IIP and PMI.

As capacity utilization rate is reckoned on a quarterly basis by the RBI, IIP (M) growth in manufacturing has been taken on a similar basis while PMI (M) manufacturing has been averaged across quarters to maintain comparability. It must be mentioned here that the PMI (M) measures improvement in level of activity in the sector over the previous month (m-o-m), while the IIP growth rate is over the previous year (y-o-y) and the capacity utilization rate is for the quarter of the year.

The period of analysis is June 2012 onwards till June 2021. The hypotheses that are tested are the following:

1. Which of the relations between capacity utilization and IIP (M) growth and PMI (M) are strong based on past data?
2. Based on (1) is it possible to conjecture the level of IIP growth or PMI (M) which will lead to better capacity utilization rates?

The chart below gives the movement in capacity utilization rate and IIP (M) growth over the last 9 years or so.



Source: RBI and MOSPI

As can be seen the two schedules do mimic each other indicating that there is a strong relation between these variables. The sharp fall that occurred in June 2020 when both the capacity utilization rate and IIP growth rates came down sharply due to the lockdown. In June 2021 too, the CU rate came down to 60% due to the second lockdown, but the intensity was less severe which is a positive sign. On the other hand, IIP growth increased by 53.4% mainly due to the low base effect as growth was -40.3% in June 2020.

To derive a statistical relation between the two, a regression of CU on IIP (M) gives the following results. Two extreme observations of June 2020 and June 2021 have been excluded as being outliers which tend to distort the equation.

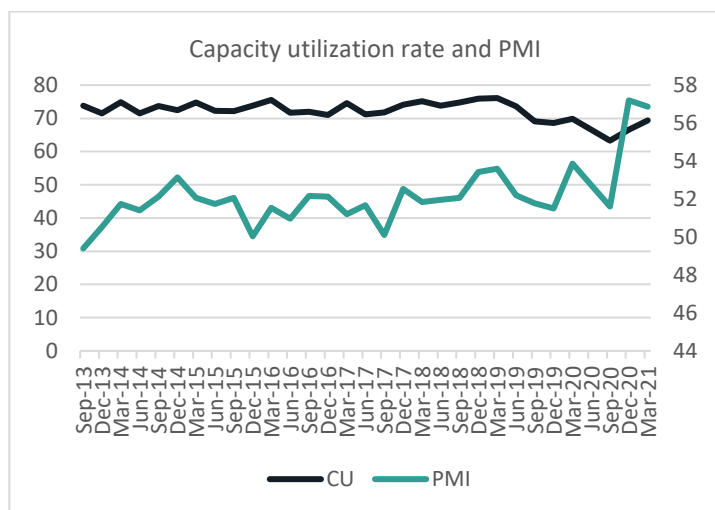
Results of regression of capacity utilization rate on IIP (M) growth rate

Multiple R	0.64
Adjusted R-square	0.39
Standard error of Y	2.33
Observations	35
Intercept	70.82
IIP (M) coefficient	0.56
t-statistic	4.76

Source: CARE Ratings

The results do indicate a fairly strong relationship between the two variables with the IIP coefficient being significant at the 5% level. Intuitively this indicates that a growth rate of say, 10% in IIP (M) will lead to the CU increasing to around 76%. Therefore, a considerable push needs to come from industrial production to increase these utilization levels which in turn will necessitate higher investment levels.

At the second stage the capacity utilization rates has been regressed on the PMI averages for the quarter.



Source: MOSPI and RBI

Results of regression of CU on PMI (M)

Multiple R	0.27
Adjusted R-square	0.04
Standard error of Y	2.83
Observations	35
Intercept	96.58
PMI (M) coefficient	-0.47
t-statistic	-1.46

Source: CARE Ratings

The CU and PMI (M) graphs do show erratic pattern and prima facie do not appear to be related. The regression analysis shows that the coefficient of determination is low, and the coefficient of PMI (M) is negative which is surprising. However, the coefficient is not significant and hence this relation can be kept aside.

Concluding remarks

Growth in IIP (M) will be the critical factor that will provide early insights into capacity utilization and growth of 10% can elevate the CU rate. This will require sustained growth in industry which is possible provided there are no further pandemic attacks which lead to restriction in economic activity. The investment rate in the economy has been slowing down as denoted by the gross fixed capital formation rate which has come down continuously from 34.3% in FY12 to 27.1% in FY21. As long as capacity utilization rate is low, there will be less incentive to invest at the macro level and will be restricted to only specific sectors. Therefore, sustained increase in IIP growth will be a necessary condition to improve the CU rate. Ideally a rate in the region of 78-80% would lead to higher investment by companies to be able to meet the rising demand. The festival season that has started should hold some clues on this aspect.

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