

Annex II - Methodology for Compiling Capacity Utilization Rates/Index

From the survey, data on installed capacity, quantity produced, capacity utilised (per cent) and value of production are available for products at NIC-2004, 4 digit level. This data is aggregated to compute the Capacity Utilisation Rate first at the NIC-2004, 3 digit industry level, thereafter at the 2-digit industry level and finally at the overall level. The methodology followed at various levels is described below.

(i) Capacity Utilisation rate at NIC-2004, 3 digit industry level

The capacity utilisation rate is computed at NIC-2004, 3 digit level in two ways.

a) In case the installed capacity and production data of all the products belonging to a group have been reported in a single measurement unit, then aggregation of installed capacity and production is done and capacity utilisation rate is computed as follows:

Product	Production	Installed Capacity	Capacity Utilisation
A	P_A	C_A	$CU_A=(P_A/C_A)*100$
B	P_B	C_B	$CU_B=(P_B/C_B)*100$
3 digit level	P_A+P_B	C_A+C_B	$CU=((P_A+P_B)/(C_A+C_B))*100$

b) If the installed capacity and production data for different products in a group/same product have been reported in two or more different measurement units (like, paper and paper products has been reported by few companies in 'number' and by few other companies in 'tonnes' or the chemical products are reported in 'number' and 'litres'), the capacity utilisation rates are computed for each measurement unit separately (by aggregation of installed capacity and production separately). Then the group level capacity utilisation rate is computed by taking a weighted average of these rates (taking 'value of production' of the products as weight).

$$CU_{P_i} = \frac{1}{\sum_{k=1}^n (VoP)_{P_{ik}}} \sum_{k=1}^n (VoP)_{P_{ik}} * CU_{P_{ik}}$$

where, let n different measurement units are available for group P_i ;

$(VoP)_{P_{ik}}$ = Value of Production of a product in group P_i with k^{th} measurement unit and

$CU_{P_{ik}}$ = Capacity Utilization of a product in group P_i with k^{th} measurement unit.

(ii) Capacity Utilisation rate at NIC 2004, 2 digit industry level

Industry level (NIC-2004, 2 digit industry level) capacity utilisation rate is computed as weighted average of capacity utilisation rate of the 3digit group level under each industry as follows:

$$CU_{IND_1} = \frac{\sum_{P_1} [(W)_{P_1} * CU_{P_1}]}{\sum_{P_1} W_{P_1}}$$

where, W_{P_1} = weight to the P_i^{th} group at 3 digit level, and

CU_{P_1} = Capacity Utilisation of P_i^{th} group at 3digit level.

To arrive at these rates, share of Net value added (NVA) by the group at 3 digit level in the total NVA of industry at 2 digit level, from the Annual Survey of Industries (ASI), 2004-05, is being used as the weight.

(iii) Capacity Utilisation rate at overall level

The Capacity Utilisation rate at overall level is calculated as a weighted average of the Capacity Utilisations of the industries. Thus

$$CU_{Overall} = \frac{\sum_j [(W)_j * CU_{IND_j}]}{\sum_j W_j}$$

where, W_j = weight to the j^{th} industry at 2 digit level, and

CU_{IND_j} = Capacity Utilisation of the j^{th} industry at 2 digit level.

To arrive at overall Capacity Utilisation, share of Net value added by the industry (2 digit level) in total manufacturing sector from the Annual Survey of Industries (ASI), 2004-05 is used as weights.