

What happens if dynamic conditions replace the static assumptions used above? First, capacity can now change as a result of investment in new plant and equipment called forth by high rates of production and high profits. The same type of relationship between inputs and outputs will prevail as in the static case at each point of time but at the larger volumes corresponding to rates of utilization of productive resources experienced at the former lower capacity.

Changes in techniques are also possible and these have a somewhat different range of possible effects. One possibility is that changes will be neutral as between inputs so that production relations retain the same shapes but the efficiency of each combination of inputs is increased—that is, a doubling of capital and labor inputs which would double output under one set of production relations, might, through simultaneous changes in techniques, be accompanied by a tripling of output.

It will be noted that under both static and dynamic conditions some combination of inputs is feasible which, given existing techniques, relative prices and stocks of productive resources, yields a minimum total cost per unit—that is, a least-cost combination. A rational entrepreneur would prefer to maintain this rate of output at all times if this were possible. Little is known about the rates of production corresponding to these least cost combinations, but such information as is available suggests that this rate is below what management generally regards as the practical capacity of their firms, particularly in manufacturing.

The McGraw-Hill surveys of business plans for investment in new plant and equipment provide estimates of actual operating rates and of preferred operating rates in various manufacturing industries. This survey measures capacity in terms of plant and equipment without adjustment for availability of manpower or materials. Each company reports changes in capacity and rates of operation in accordance with their own definition though most companies in each industry appear to follow similar practices in defining capacity. In two surveys (1955 and 1957) companies reported their preferred operating rates. For all manufacturing, the preferred rate is reported to be about 90 percent of capacity and the rates for individual industries range from 85 percent in transportation equipment to 95 percent in paper and 96 percent in steel.

If, in general, managements tend to report as preferred operating rates, those corresponding to their least-cost combination of resources, as seems reasonable, then it could be concluded that the optimum operating rate, at least in manufacturing, is significantly below management's estimate of practical capacity and even further below any conceivable measure of absolute capacity since this must be well above rated capacity. Higher rates of operation for prolonged periods (as during and immediately after World War II) amply sustain this point.

When attention turns from the individual plant, firm, or industry to an aggregate production process for the total economy these points become clear:

(1) The optimum or best operating rate for the economy may not be a simple average of the preferred or optimum rates of the individual production units—firms, plants, etc., weighted by their individual capacities. The optimum rate for the total economy will reflect both the individual preferred rates and the composition or mix of demand