**Efficiency of market equilibrium**

In a competitive market, market equilibrium occurs at the intersection of the demand and the supply curves. At this point, the quantity supplied is equal to quantity demanded. The equilibrium point (E) where the demand and supply curves intersect represents the market equilibrium, where the quantity demanded is equal to quantity supplied (OQ) at a given price (OP). At this price level, both consumers and producers are satisfied and there is no excess demand and supply.

A market is efficient if the maximum amount of goods and services are being produced with a given level of resource. At this point the consumer and producers surplus is highest. Market efficiency is achieved when the allocation of resources maximizes total social welfare. Market efficiency leads to the maximization of total social welfare. In a perfectly competitive market, the equilibrium is efficient because it achieves allocative efficiency, which occurs when the marginal benefit derived from consuming the last unit of a good equals the marginal cost of producing it. This is represented by the condition

MB=MC, or MC=MR

Where MB is the marginal benefit or marginal utility derived by consumers and MC is the marginal cost of production. When the market reaches this equilibrium, it ensures that resources are allocated efficiently, and no more gains can be made without causing a loss to someone else. This efficiency is desirable because it leads to a higher overall welfare and maximizes the satisfaction of consumers and the profits of producers.

There are two types of efficiency in the market equilibrium:

1. **Productive efficiency**: Productive efficiency occurs when resources are utilized in the most efficient manner to minimize production costs. It is achieved when output is produced at the lowest possible cost.
2. **Allocative efficiency**: Allocative efficiency occurs when resources are allocated in such a way that the production mix matches consumer preferences that maximizes social welfare. In an allocatively efficient market, the marginal benefit (measured by consumer willingness to pay) equals the marginal cost of production.