Externalities and Market Failure

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Introduction

Externalities often cause market failure. It prevents the achievement of Pareto Optimality even under the conditions of perfect competition. Externalities refer to the benefits and detrimental effects of an economic unit (a firm, a consumer or an industry) on others. The beneficial externalities created by a consumer or a firm for others are known as external economies and detrimental or negative externalities imposed on others by a productive firm or a consumer are known as external diseconomies.

Thus, when an economic unit creates benefits for others for which he does not receive any payment, there exist beneficial externalities or external economies. On the other hand, external diseconomies occur when an economic unit inflicts costs on others for which he does not make any payment.

When we have external economies, then the private marginal cost of the firm will be higher than the social marginal cost since the firm will not take into account benefits external to it (i.e. benefits created for others). Further the market price fixed on the basis of private marginal cost will not reflect the social marginal cost which will be lower when external economies occur. Similarly, when external diseconomies of large scale production occurs, then the private marginal cost will be lower than the social marginal cost, since the firm will not take into account the harm it causes to other's by its activity. It can thus be concluded that externalities arise basically due to the fact that effects regarding costs, output, employment, technological activities of a producer or a consumer on others or society are not reflected in market prices and so market prices do not truly reflect social cost.

Some Examples:

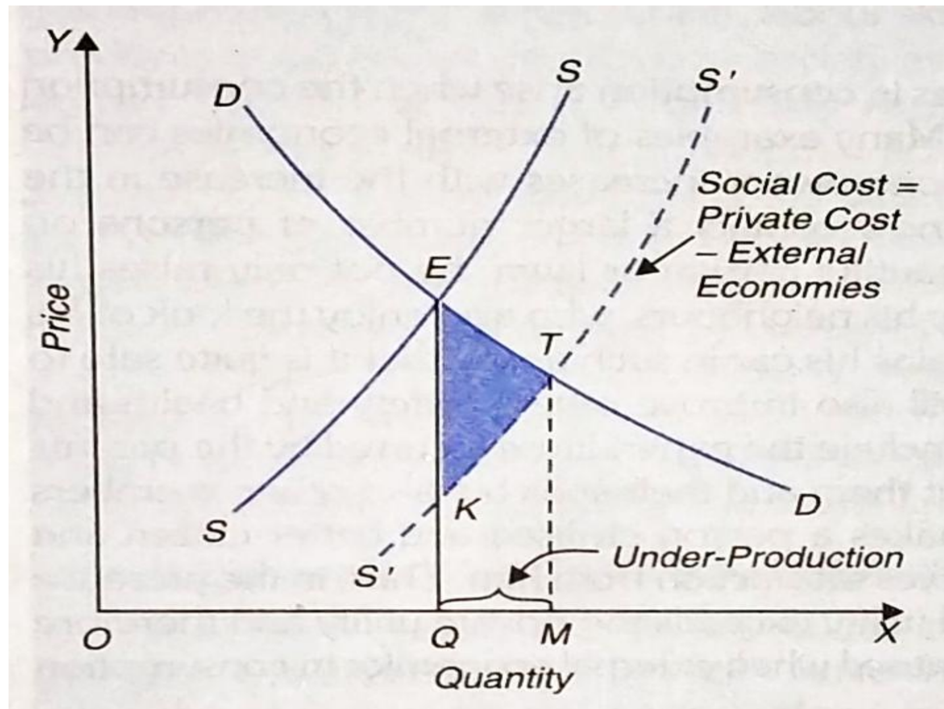
- Expansion in production by a firm increases the smoke it emits and thereby harms the residents in the vicinity causing external diseconomies of large scale production
- Maintenance of a beautiful garden by an individual not only increases his own satisfaction but also raises the satisfaction of his neighbour who also enjoys the look of the beautiful garden thereby creating external economies

Externalities and Market Failure

The existence of beneficial and detrimental externalities plays a significant role in determining the activities of production and consumption in the economy. These externalities act as an obstacle in the achievement of Pareto Optimality due to divergence between private and social costs and between private and social benefits.

Market failure due to presence of External Economies

As we have seen earlier also, in case of external economies of production, private marginal cost of the firm is higher than the social marginal cost. Under these circumstances therefore a firm which creates external benefits for others will not produce its product to the extent social interest requires. The case is illustrated in the graph given below:

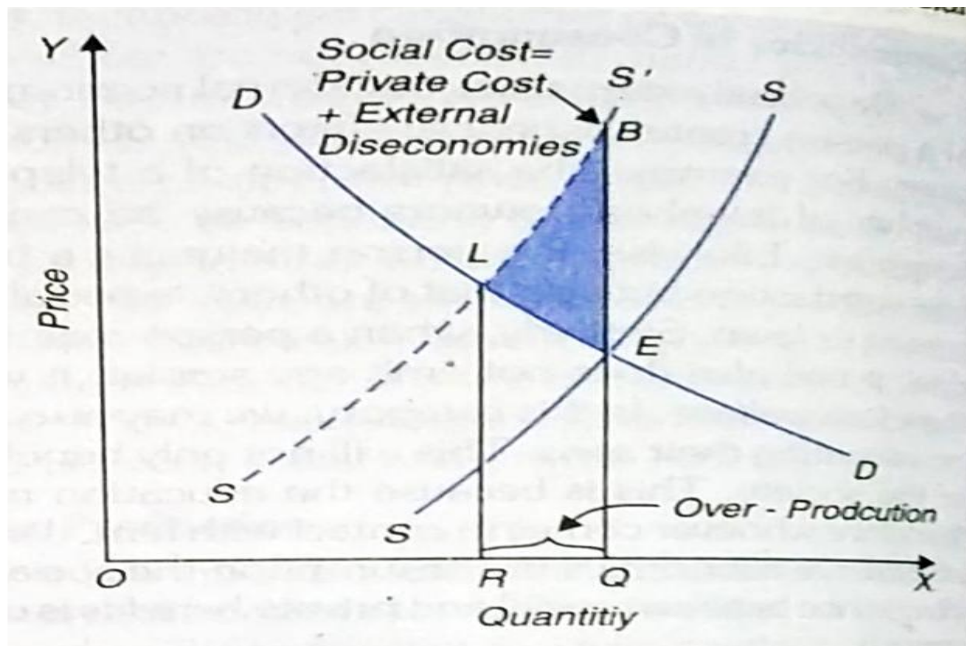


Here SS represents the supply curve for the product of the industry which has been obtained by summing up the private marginal cost curves of firms. Due to existence of external economies marginal social cost will be smaller than the private marginal costs. Therefore the supply curve S'S' of the product reflecting social marginal cost will be lower than the supply curve SS based on private marginal costs. Supply curve reflecting social cost is lower because it takes into account external economies generated by the production in the industry, while private cost does not take into account these externalities.

E is the point of equilibrium where demand curve DD intersects supply curve SS and OQ is the amount of output produced. But the socially optimum output is OM at which social marginal cost curve S'S' intersects the demand curve denoted by point T. It is thus clear that the product is being produced in smaller quantity than the socially optimum output OM. Thus the existence of external economies results in under – production and loss of social welfare denoted by the area ETK.

Market failure due to presence of External Diseconomies

In case of detrimental externalities or external diseconomies in production, private marginal cost will be lower than the social marginal cost since the former will not take into account costs imposed on others. Thus, in this case equating price with private marginal cost in over – production of the product, i.e, more than socially optimum output will be produced. This is also a case of market failure. The above situation is depicted in the graph below:



SS is the supply curve based on private marginal cost and S'S' is the supply curve which takes into account external diseconomies and therefore reflects social cost. DD is the demand curve. Initial equilibrium is achieved at point E where SS curve intersects DD demand curve. However, curve S'S' intersects DD at point L where socially optimum level of output OR is produced. Therefore, when external diseconomies exists in production, equating price with private marginal cost will result in over-production of the product, i.e., more than socially optimum output will be produced and will cause loss of social welfare equal to the area ELB.