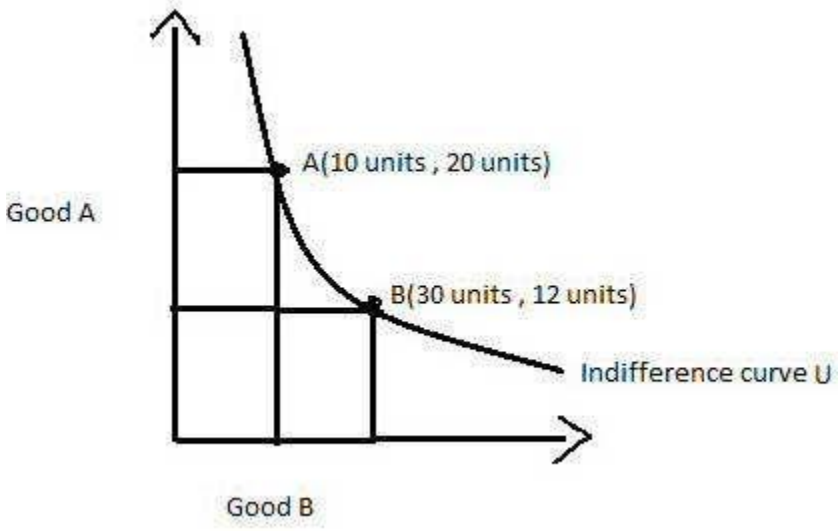
Course: Micro Economics (5406)
Semester: Spring, 2021
ASSIGNMENT No. 2

Q.1 Define indifference curve. What are the properties, application and uses of indifference curve technique?

An indifference curve is a graph showing combination of two goods that give the consumer equal satisfaction and utility. Each point on an indifference curve indicates that a consumer is indifferent between the two and all points give him the same utility.

Graphically, the indifference curve is drawn as a downward sloping convex to the origin. The graph shows a combination of two goods that the consumer consumes.



The above diagram shows the U indifference curve showing bundles of goods A and B. To the consumer, bundle A and B are the same as both of them give him the equal satisfaction. In other words, point A gives as much utility as point B to the individual. The consumer will be satisfied at any point along the curve assuming that other things are constant.

These combinations are represented by small circles in Fig. 4.7 where apple is measured on the horizontal axis and orange on the vertical axis. There may be many other such combinations. Let I be a continuous line joining the small circles and other similar points. The curve I_1 is called an indifference curve.

Thus an indifference curve may be defined as a curve which shows combinations of goods which are equivalent to one another. It is a locus of points sharing alternative combinations of apple and orange which give the same satisfaction to the consumer. The consumer has no reason to prefer any of the combinations on the curve to any other on the same curve. He is indifferent as to which of these combinations he uses. Each indifference curve is an equal-utility curve. The indifference curve approach is based upon the following assumptions:

1. Non-Satiety:

A rational person will prefer a larger quantity of a good than a smaller amount of it. It is assumed that the consumer has not yet reached the satisfaction point in respect of competition of a good.

2. Transitivity:

The consumer is supposed to be consistent about his tastes and preference. For example if he prefers A to B and B to C then it follows that he also prefers A to C. This assumption is called Transitivity.

3. Diminishing Marginal Substitutability:

Suppose a consumer buys orange and apple. It can be assumed that as more and more of units of apple are substituted for orange, the consumer will be willing to give up fewer and fewer units of orange for additional units of apple. As the quantity of orange consumed increases, more of it will be required to compensate for loss of apple. This follows from the principle that as the consumption of orange increases the desire for it will fall and as the consumption of apple decreases the desire for it will increase.

Therefore, the marginal rate of substitution of orange for apple increases as the quantity of orange increases relatively to apple. Alternatively we can say that the marginal rate of substitution of orange for apple diminishes as the supply of apple diminishes. This is called the Principle of Diminishing Marginal Substitutability. It is assumed that the two goods are not perfect substitutes for one another and that want for the goods are not satiable.

The Principle of Diminishing Marginal Substitutability corresponds to the older law of diminishing marginal utility.

Q.2 What is the nature of partnership? Explain the private and public limited companies.

When two or more persons join hands to set up a business and share its profits and losses it is called Partnership. Section 4 of the Indian Partnership Act 1932 defines partnership as the 'relation between persons who have agreed to share the profits of a business carried on by all or any of them acting for all'.

Partners are the persons who have entered into partnership individually with one another. Partners collectively are called 'firm'. The essential features of the partnership are as follows.

Two or More Persons

There should be at least two persons coming together to form the partnership for a common goal. In other words, the minimum number of partners in a partnership firm can be two.

Indian Partnership Act, 1932 has put no limitations on maximum numbers of partners in a firm. But however, Indian Companies Act, 2013 puts a limit on a number of the partners in a firm as follow:

- For Banking Business, Partners must be less than or equal to 10.
- For Any Other Business, Partners must be less than or equal to 20.
- If the number of partners exceeds the limits, the partnership becomes illegal.

Agreement

The partnership is an agreement between two or more persons who decided to do business and share its profits and losses. To have a legal relationship between the partners, the partnership agreement becomes the basis. The agreement can be in written form or oral form. An oral agreement is equally valid. But, preferably the partners should have a written agreement, in order to avoid disputes in future.

Business

To carry on some business there should be an agreement. Mere co-ownership of a property does not amount to the partnership. The business must also be legal in nature, a partnership to carry out illegal business is not valid.

Mutual Agency

The business of a partnership firm may be carried on by all the partners or any of them acting for all. This statement has two important implications. First, to participate in the conduct of the affairs of its business, every partner is entitled. Second that a relationship of mutual agency between all the partners exists.

For all the other partners, each partner carrying on the business is the principal as well as the agent. He can bind other partners by his acts. And also is bound by the acts of other partners with regard to the business of the firm.

Sharing of Profit

The agreement between partners must be to share profits and losses of a business. Sharing of profits and losses is important. The partnership is not for the purpose of some charitable activity.

Liability of Partnership

Each partner is liable jointly with all the other partners. And also when is a partner, severally liable to the third party for all the acts done by the firm. Liability of the partner is not limited. This implies that for paying off the firm's debts, his private assets can also be used.

Agreement to carry on a business between the partners, partnership comes into existence. The partnership agreement can be either oral or written. The Partnership Act does not require that the agreement must be in writing. But when the agreement is in written form, it is called 'Partnership Deed'. Partnership deed should be duly signed by the partners, stamped & registered.

Partnership deed generally contains the following details:

- Names and Addresses of the firm and its main business;
- Names and Addresses of all partners;
- A contribution of the amount of capital by each partner;
- The accounting period of the firm;
- The date of commencement of partnership;
- Rules regarding an operation of Bank Accounts;
- Profit and loss sharing ratio;
- The rate of interest on capital, loan, drawings, etc;
- Mode of auditor's appointment, if any;
- Salaries, commission, etc, if payable to any partner;
- The rights, duties, and liabilities of each partner;
- Treatment of loss arising out of insolvency of one or more partners;
- Settlement of accounts on the dissolution of the firm;
- Method of a settlement of disputes among the partners;

- Rules to be followed in case of admission, retirement, a death of a partner; and
- Any other matter relating to the conduct of business. Normally, all the matters affecting the relationship of partners amongst themselves are covered in partnership deed.

Q.3 How price and output is determine under perfect competition, in short run period? Explain.

Perfect competition is defined as a market situation where there are a large number of sellers of a homogeneous product. An individual firm supplies a very small portion of the total output and is not powerful enough to exert an influence on the market price.

A single buyer, however large, is not in a position to influence the market price. Market price in a perfectly competitive market is determined by the interaction of the forces of market demand and market supply. Market demand means the sum of the quantity demanded by individual buyers at different prices.

Similarly, market supply is the sum of quantity supplied by the individual firms in the industry. Each seller and buyer takes the price as determined. Therefore, in a perfectly competitive market, the main problem for a profit-maximizing firm is not to determine the price of its product but to adjust its output to the market price so that profit is maximized.

(a) Market Period:

In a market period, the time span is so short that no firm can increase its output. The total stock of the commodity in the market is limited. The market period may be an hour, a day or a few days or even a few weeks depending upon the nature of the product.

For example, in the case of perishable commodities like vegetables, fish, eggs, the period may be a day. Since the supply of perishable commodities is limited by the quantity available or stock in day that neither can be increased nor can be withdrawn for the next period, the whole of it must be sold away on the same day, whatever may be the price.

Fig 4.1 shows that the supply curve of perishable commodities like fish is perfectly inelastic and assumes the form of a vertical straight line SS. Let us suppose that the demand curve for fish is given by dd. Demand curve and supply curve intersect each other at point R, determining the price OP. If the demand for fish increases suddenly, shifting the demand curve upwards to d'd'.

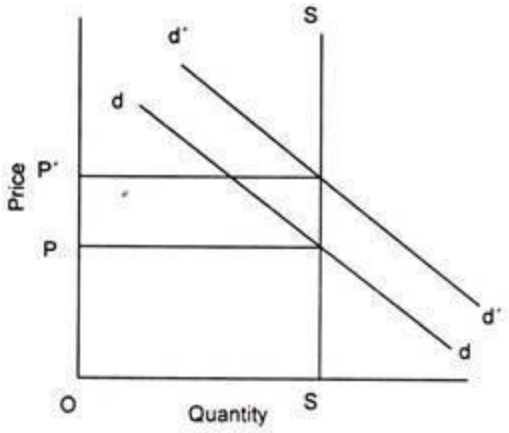


Fig. 4-1. Pricing in the market period.

The equilibrium point shift from R to R" and the price rises to OP'. In this situation, price is determined solely by the demand condition that is an active agent.

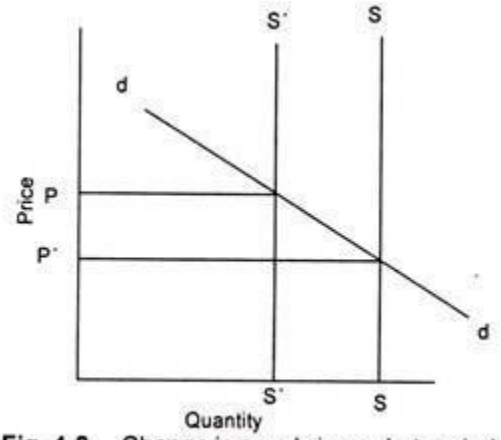


Fig. 4-2. Change in supply in market period.

Similarly, if the demand for a product is given, as shown in demand curve SS in figure 4.2. If the supply of the product decreases suddenly from SS to S'S', the price increases from P to P'. In this case price is determined by supply, the supply being an active agent.

In this case supply curve shifts leftward causing increase in price of the reduced supply goods. Given the demand curve dd and supply curve SS, the price is determined at OP. Demand curve remaining the same, the decrease in supply shifts the supply curve to its left to S'S'. Consequently, the price rises from OP to OP'.

The supply curve of non-perishable but reproducible goods will not be a vertical straight line throughout its length. This is for certain goods can be withdrawn from the market if the price is too low as the seller would not sell any amount of the commodity in the present market period and would like to hold back the whole stock.

The price below which the seller declines to offer for any amount of his product is known as 'reserve price'. Thus, the seller faces two extreme price-levels; at one he is ready to sell the whole stock and the other he refuses to sell any. The amount he offers for sale will vary with price.

The seller will be ready to supply more at a higher price rather than at a lower one will depend upon his anticipations of future price and intensity of his need for cash. The supply curve of a seller will, therefore, slope

upwards to the right up to the price at which he is ready to sell the whole stock. Beyond this point, the supply curve will become a vertical straight line whatever the price.

(b) Pricing in the Short Run- Equilibrium of the Firm:

Short period is the span of time so short that existing plants cannot be extended and new plants cannot be erected to meet increased demand. However, the time is adequate enough for producers to adjust to some extent their output to the increase in demand by overworking their fixed capacity plants. In the short run, therefore, supply curve is elastic.

Figure 4.3 shows the average and marginal cost curves of the firm together with its demand curve. Demand curve, in a perfectly competitive market, is also the average revenue curve and the marginal revenue curve of the firm. The marginal cost intersects the average cost at its minimum point. The U-shape of both the cost curves reflects the law of variable proportions operative in the short run during which the size of the plant remains fixed.

The firm is in equilibrium at the point B where the marginal cost curve intersects the marginal revenue curve from below:

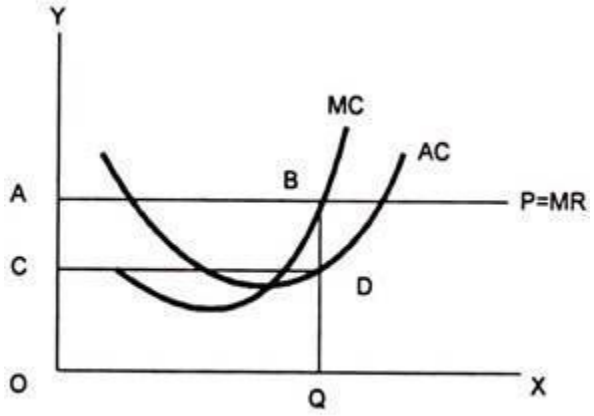


Fig. 4-3. Pricing in the short run.

The firm supplies OQ output. The QC is the average cost and the firm earns total profit equal to the area shown by ABCD. The firm maximizes its profit. Earlier to the point of equilibrium, the firm does not attain the maximum profit as each additional unit of output brings more revenue that its cost. Any level of output greater than OQ brings less marginal revenue than marginal cost.

For the equilibrium of a firm the two conditions must be fulfilled:

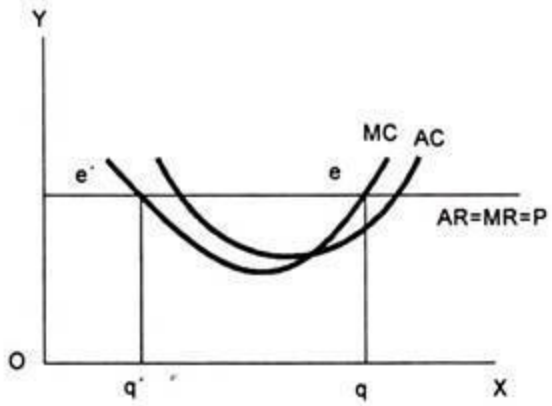


Fig. 4-4. Equilibrium conditions.

(a) The marginal cost must be equal to the marginal revenue. However, this condition is not sufficient, since it may be fulfilled and yet the firm may not be in equilibrium. Figure 4.4 shows that marginal cost is equal to marginal revenue at point e', yet the firm is not in equilibrium as Oq output is greater than Oq'.

(b) The second and necessary condition for equilibrium requires that the marginal cost curve cuts the marginal revenue curve from below i.e. the marginal cost curve be rising at the point of intersection with the marginal revenue curve.

Thus, a perfectly competitive firm will adjust its output at the point where its marginal cost is equal to marginal revenue or price, and marginal cost curve cuts the marginal revenue curve from below.

The fact that a firm is in equilibrium does not imply that it necessarily earns supernormal profits. In the short-run equilibrium firms may earn supernormal profits, normal profits or may incur losses.

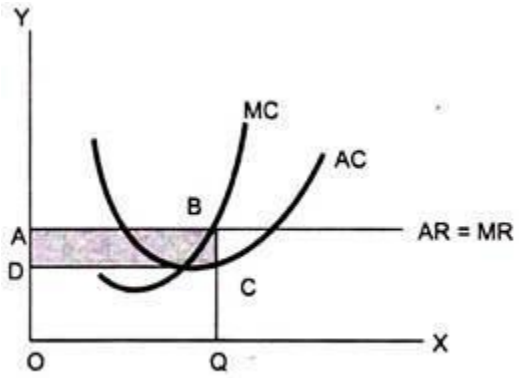


Fig. 4-5.

Whether the firm makes supernormal profits, normal profits or incurs losses depends on the level of the average cost at the short run equilibrium. If the average cost is below the average revenue, the firm earns supernormal profits. Figure 4.5 illustrates that the average cost QC is less than average revenue QB, and the firm earns profits equal to the area ABCD.

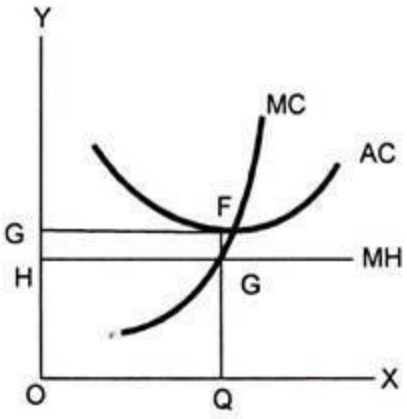


Fig. 4-6.

If the average cost is above the average revenue the firm makes a loss. Figure 4.6 shows that the Average cost QF is higher than QG average revenue and the firm is incurring loss equal to the shaded area EFGH. In this case the firm will continue to produce only if it is able to cover its variable costs.

(c) Pricing in the Long Run:

The long run is a period of time long enough to permit changes in the variable as well as in the fixed factors. In the long run, accordingly, all factors are variable and non- fixed. Thus, in the long run, firms can change their output by increasing their fixed equipment. They can enlarge the old plants or replace them by new plants or add new plants.

Moreover, in the long run, new firms can also enter the industry. On the contrary, if the situation so demands, in the long run, firms can diminish their fixed equipments by allowing them to wear out without replacement and the existing firm can leave the industry.

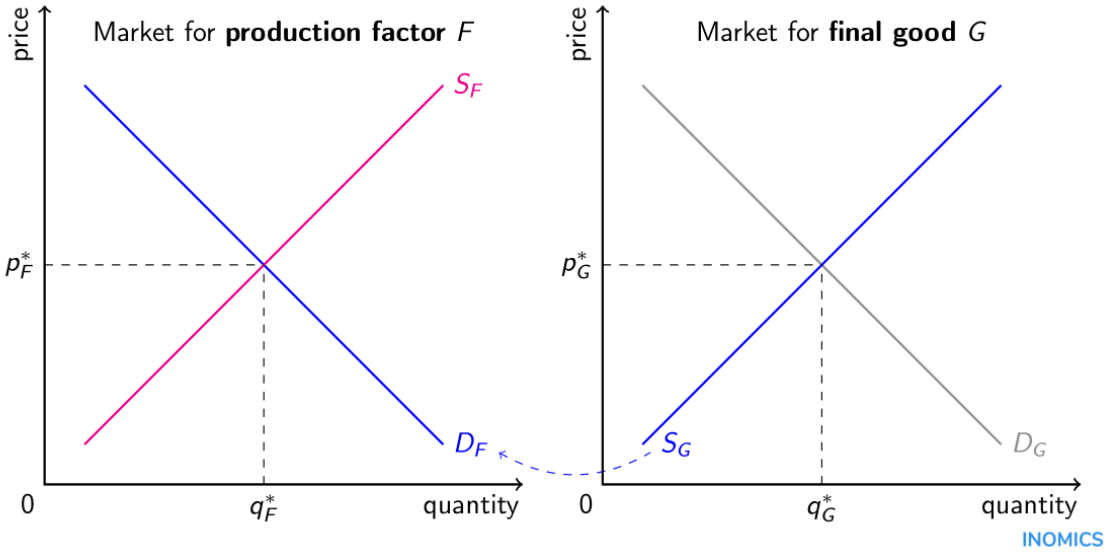
Thus, the long run equilibrium will refer to a situation where free and full scope for adjustment has been allowed to economic forces. In the long run, it is the long run average and marginal cost curves, which are relevant for making output decisions. Further, in the long run, average variable cost is of no particular relevance. The average total cost is of determining importance, since in the long run all costs are variable and none fixed.

In the short run a firm under perfect competition is in equilibrium at that output at which marginal cost equals price or Marginal Revenue. This is equally valid in the long run. But, in the long run for a perfectly competition firm to be in equilibrium, besides marginal cost being equal to price, price must also be equal to average cost. If the price is greater than the average cost, the firms will be making supernormal profits.

Q.4 What is Factor markets? What are the factor supply and the concept of marginal factor cost?

Factor markets (or resource markets) are markets for the inputs to production. A producer is typically a seller in the market for a product (supply SG in the graph below) while simultaneously being a buyer in the markets for its factors of production (demand DF below).

- In the view of economists, there are only two markets: the factor market and the goods and services market.
- They also can be called the input market and the output market.
- The input market supplies the resources needed to make finished products.
- The output market buys and uses the finished products.
- The factor market is driven by demand in the goods and services market.



Economic systems comprise many markets that are interlinked with one another. For example, the market for cars depends on the markets for raw materials such as steel, rubber and glass, electronic components, as well as labour markets for people to design and assemble the cars. What is happening in one market can have a "ripple effect" on surrounding markets. If the price of steel increases then it should not take long for the supply of cars to reduce, pushing up their price. On the other hand, if the price of fuel increases, demand for cars will fall thus reducing demand for steel by car producers.

When deciding how much of a production factor to employ, producers weigh its marginal cost (MC) against its marginal revenue product (MRP). MC is derived from prices in the factor market while MRP depends on the market for the final product. As long as the last unit of input adds more to revenue than it does to cost (MRP > MC), it still makes economic sense to employ it.

If there were perfect competition in all markets then the effects of a supply or demand shock in one market on prices in the other markets would be relatively easy to calculate. However, in reality, most markets exist in some state of imperfect competition, which means that power is not equally balanced between buyers and sellers. The labour market is a factor market where prices (i.e. wages) are often affected by collective bargaining through trade unions, or the decision by a government to implement a minimum wage or intervene with some other regulation. Producers can then find themselves squeezed between a high degree of competition in the markets for their final products and monopsony pressure in their factor markets.

Interdependencies between factor and product markets sometimes provide good reason for producers and suppliers to merge along the supply chain (so-called vertical integration). In effect, sales contracts are then replaced by employment contracts and free, internal transactions between departments. While such changes in ownership structure can help producers to control risk and increase efficiency, they tend also to reduce competition which can lead to market failure and issues of **antitrust**. By definition, **ceteris paribus** partial-equilibrium analysis is insufficient to understand the impact of a change in equilibrium in a factor market on the equilibria in related markets. A general-equilibrium approach that encompasses knock-on effects and changes across multiple markets is thus required.

A factor market is termed an input market, while the market for finished products or services is an output market. This can be viewed as a closed-loop flow: In the factor market, households are sellers and businesses are buyers, while in the goods and services market, businesses are sellers and households are buyers.

Workers are participating in the factor market when they make their services available to businesses. An individual member of a household who is looking for a job is participating in the factor market. An employee's wages are a component of the factor market, but the money will be spent in the goods and services market.

The factor market provides every component required to produce goods and services.

In the appliance manufacturing industry, workers who are skilled in refrigerator and dishwasher assembly are considered to be part of the factor market when they are available for hire. In the modern world, job search websites are part of the factor market.

Similarly, raw materials like steel and plastic—both of which are used to build refrigerators and dishwashers—are also examples of factor market products.

Q. 5 What do you know about Monopoly and Oligopoly? Explain and differentiate.

A monopoly and an oligopoly are market structures that exist when there is imperfect competition. A monopoly is when a single company produces goods with no close substitute, while an oligopoly is when a small number of relatively large companies produce similar, but slightly different goods. In both cases, significant barriers to entry prevent other enterprises from competing.

A market's geographical size can determine which structure exists. One company might control an industry in a particular area with no other alternatives, though a few similar companies operate elsewhere in the country. In this case, a company may be a monopoly in one region, but operate in an oligopoly market in a larger geographical area.

- A monopoly occurs when a single company that produces a product or service controls the market with no close substitute.
- In an oligopoly, two or more companies control the market, none of which can keep the others from having significant influence.
- Anti-trust laws prevent companies from engaging in unreasonable restraint of trade and transacting mergers that lessen competition.

A monopoly exists in areas where one company is the only or dominant force to sell a product or service in an industry. This gives the company enough power to keep competitors away from the marketplace. This could be due to high barriers to entry such as technology, steep capital requirements, government regulation, patents or high distribution costs.

Once a monopoly is established, lack of competition can lead the seller to charge high prices. Monopolies are price makers. This means they determine the cost at which their products are sold. These prices can be changed at any time. A monopoly also reduces available choices for buyers. The monopoly becomes a pure monopoly when there is absolutely no other substitute available.

Monopolies are allowed to exist when they benefit the consumer. In some cases, governments may step in and create the monopoly to provide specific services such as a railway, public transport or postal services. For example, the United States Postal Service enjoys a monopoly on first class mail and advertising mail, along with monopoly access to mailboxes.

In an oligopoly, a group of companies (usually two or more) controls the market. However, no single company can keep the others from wielding significant influence over the industry, and they each may sell products that are slightly different.

Prices in this market are moderate because of the presence of competition. When one company sets a price, others will respond in fashion to remain competitive. For example, if one company cuts prices, other players typically follow suit. Prices are usually higher in an oligopoly than they would be in perfect competition.

Because there is no dominant force in the industry, companies may be tempted to collude with one another rather than compete, which keeps non-established players from entering the market. This cooperation makes them operate as though they were a single company.

In 2012, the U.S. Department of Justice alleged that Apple (AAPL) and five book publishers had engaged in collusion and price fixing for e-books. The department alleged that Apple and the publishers conspired to raise the price for e-book downloads from $9.99 to $14.99. A U.S. District Court sided with the government, a decision which was upheld on appeal.

In a free market, price fixing—even without judicial intervention—is unsustainable. If one company undermines its competition, others are forced to quickly follow. Companies that lower prices to the point where they are not profitable are unable to remain in business for long. Because of this, members of oligopolies tend to compete in terms of image and quality rather than price.

Oligopolies and monopolies can operate unencumbered in the United States unless they violate anti-trust laws. These laws cover unreasonable restraint of trade; plainly harmful acts such as price fixing, dividing markets and bid rigging; and mergers and acquisitions (M&A) that substantially lessen competition.

Without competition, companies have the power to fix prices and create product scarcity, which can lead to inferior products and services and higher costs for buyers. Anti-trust laws are in place to ensure a level playing field.

In 2017, the U.S. Department of Justice filed a civil antitrust suit to block AT&T's merger with Time Warner, arguing the acquisition would substantially lessen competition and lead to higher prices for television programming.[5] However, a U.S. District Court judge disagreed with the government's argument and approved the merger, a decision that was upheld on appeal.

The government has several tools to fight monopolistic behavior. This includes the Sherman Antitrust Act, which prohibits unreasonable restraint of trade, and the Clayton Antitrust Act, which prohibits mergers that lessen competition and requires large companies that plan to merge to seek approval in advance.[1] Anti-trust laws do not sanction companies that achieve monopoly status via offering a better product or service, or though uncontrollable developments such as a key competitor leaving the market.