3.6 Monopsony

A monopsony is defined as a market characterized by a single buyer.

Monopsony = single buyer of a good.

Monopsony power is market power of buyers. A firm with monopsony power is a buyer that is large enough relative to the market to influence the price of a good. Competitive firms are price takers: prices are fixed and given, no matter how little or how much they buy. In food and agriculture, beef packers are often accused of having market power, and pay lower prices for cattle than the competitive price. This section will explore the causes and consequences of monopsony power.

3.6.1 Terminology of Monopsony

Consider any decision from an economic point of view. Thinking like an economist results in comparing the benefits and costs of any decision. This section will apply economic thinking to the quantity and price of a purchase. It will follow the same economic approach that has been emphasized, but will define new terminology to distinguish the buyer’s decision from the seller’s decision. It is useful to recall the meaning of supply and demand curves. The demand curve represents the consumers’ willingness and ability to pay for a good. The demand curve is downward sloping, reflecting scarcity: larger quantities are less scarce, and thus less valuable. The supply curve represents the producers’ cost of production, and is upward sloping. As more of a good is produced, the marginal costs of production increase, since it requires more resources to produce larger quantities. These economic principles will be useful in what follows, an analysis of a buyer’s decision to purchase a good.

The economic approach to the purchase of a good is to employ marginal decision making by continuing to purchase a good as long as the marginal benefits outweigh the marginal costs. The following terms are defined to aid in our analysis of buyer’s market power.

Marginal Value (MV) = The additional benefits of buying one more unit of a good.

Marginal Expenditure (ME) = The additional costs of buying one more unit of a good.

Average Expenditure (AE) = The price paid per unit of a good.
A review of competitive buyers and sellers is a good starting point for our analysis.

Figure 3.17 Competitive Buyer and Seller

Figure 3.17 demonstrates the competitive solution for a competitive buyer and a competitive seller. The competitive buyer faces a price that is fixed and given ($P^*$). The price is constant because the buyer is so small relative to the market that her purchases do not affect the price. Average expenditures ($AE$) and marginal expenditures ($ME$) for this buyer are constant and equal ($AE = ME$). The buyer will continue purchasing the good until the marginal benefits, defined to be the marginal value ($MV$) are equal to marginal expenditures ($ME$) at $q^*$, the optimal, profit-maximizing level of good to purchase.

A competitive seller takes the price as fixed and given ($P^*$). The price is constant because the seller is so small relative to the market that his sales do not affect the price. Average revenues ($AR$) and marginal revenues ($MR$) for this seller are constant and equal ($AR = MR$). The seller will continue producing the good until the marginal
benefits, defined to be the marginal revenues (MR) are equal to marginal cost (MC) at \( q^* \), the optimal, profit-maximizing level of good to produce.

A monopsony uses the same decision making framework, comparing marginal benefits and marginal costs. The distinction is that a monopsony is large enough relative to the market to influence the price. Thus, the monopsony faces an upward-sloping supply curve: as the monopsony purchases more of the good, it drives the price up (Figure 3.18).

![Figure 3.18 Monopsony](image)

Since the firm is large, when it purchases more of a good, it drives the price higher. The average expenditure (AE) curve is the supply curve of the good faced by a monopsony. An example might be Ford Motor Company. When Ford purchases more steel (or glass or tires), the firm is so large relative to the market for steel that it drives the price up. Steel companies will need to buy more resources to produce more steel, and it will cost them more, since Ford is so large a buyer in the steel market.

The profit-maximizing solution is found by setting \( MV = ME \), and purchasing the corresponding quantity \( Q_M \). Note that the monopsony is restricting quantity, as a monopoly restricts output to drive the price up. However, a monopsony restricts
quantity in order to drive the price down to $P_m$. The monopsony is buying less than the competitive output ($Q_c$) and paying a price lower than the competitive price ($P_c$).

It is worth answering the question, “why is $ME > AE$?” The monopsony faces an upward-sloping supply curve ($AE$). This reflects the higher cost of bringing more resources into the production of the good purchased by the monopsony. This can be seen in Figure 3.19. Next, the relationship between $AE$ and $ME$ is derived. This derivation will be familiar, as it is the same as the relationship between $AR$ and $MR$ from section 3.3.2 above.

![Figure 3.19 Monopsony Supply Curve](image)

AE = $P(Q)$
TE = $P(Q)Q$
ME = $\frac{\partial TE}{\partial Q} = (\frac{\partial P}{\partial Q})Q + P$
ME = AE + $(\frac{\partial P}{\partial Q})Q$

The first term in the expression for $ME$ is $AE$, which corresponds to area $B$ in Figure 3.19. Average expenditure is equal to $P_0$ at quantity $Q_0$. The second term, $(\partial P/\partial Q)Q$, is equal to area $A$ in the diagram. This area represents the change in price given a small change in quantity $(\partial P/\partial Q)$, multiplied by the quantity $(Q)$. For a competitive firm, $(\partial P/\partial Q) = 0$, since the competitive firm is a price taker. For a competitive firm, $AE = ME$, as shown in the left of Figure 3.17. For a monopsony, the firm pays the initial price plus
the increase in price caused by an increase in output. The monopsony must pay this new price (P1 in Figure 3.19) for all units purchased (Q). This causes ME to be above AE.

It is instructive to view the monopoly graph next to the monopsony graph (Figure 3.20).

Figure 3.20 Monopoly and Monopsony

The monopoly restricts output to drive up the price. The monopoly output is less than the competitive output (Q_M < Q_C), and the monopoly price is higher than the competitive price (P_M > P_C). The monopsony restricts output to drive down the price (P_M < P_C). Both firms are maximizing profit by using the market characteristics that they face.
3.6.2 Welfare Effects of Monopsony

To measure the welfare impact of monopsony, the monopsony outcome is compared with perfect competition. In competition, the price is equal to marginal cost \((P = MC)\), as in Figure 3.21. The competitive price and quantity are \(P_c\) and \(Q_c\). The monopsony price and quantity are found where marginal value \((MV)\) equals marginal expenditure \((MV = ME)\): \(P_M\) and \(Q_M\). The graph indicates that the monopsony reduces output from the competitive level in order to decrease the price \((P_M < P_c\) and \(Q_M < Q_c)\). The welfare analysis of a monopsony relative to competition is straightforward.

\[
\begin{align*}
\Delta CS &= +A - B \\
\Delta PS &= -AC \\
\Delta SW &= -BC \\
\text{DWL} &= BC
\end{align*}
\]

Consumers are winners, and the benefits of monopsony depend on the magnitudes of areas A and B.

Figure 3.21 Welfare Effects of Monopsony
3.6.3 Sources of Monopsony Power

There are three major sources of monopsony power, analogous to the three determinants of monopoly power:

1. the price elasticity of market supply ($E^s$),
2. the number of buyers in a market, and
3. interaction among buyers.

The price elasticity of supply is the most important determinant of monopsony power, and the monopsony benefits from an inelastic supply curve. When the price elasticity is large ($E^s > 1$), the supply is relatively elastic, and the firm has less market power. When the price elasticity is small ($E^s < 1$), the demand is relatively inelastic, and the firm has more market power.

![Figure 3.22 Price Elasticity of Supply Impact on Monopsony](image)

The second determinant of monopsony power is the number of firms in an industry. If a firm is the only buyer in an industry, the firm is a monopsony, and has market power.
The more firms there are in a market, the more competition the firm faces, and the less market power.

The third source of monopsony power is interaction among firms. If firms compete aggressively with each other, less monopsony power results. On the other hand, if firms cooperate and act together, the firms can have more monopsony power.