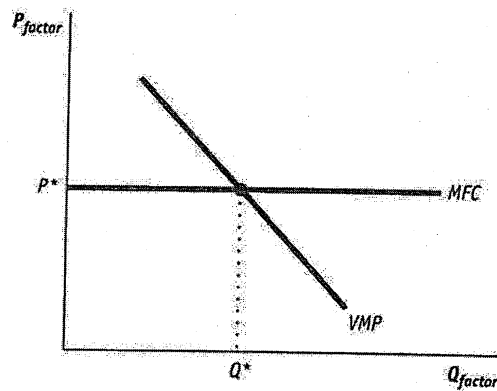


Competitive Firm Facing Competitive Factor Market

In a competitive factor market, firms can hire any quantity of the factor at the market price. Therefore, the marginal factor cost is constant at the market price. The *MFC* curve is the firm's supply curve for labor.

The benefit of hiring the next unit of a particular factor is the marginal product (*MP*) of that unit multiplied by the marginal revenue received from selling the product being produced. This is the marginal revenue product (*MRP*). Recall that in a perfectly competitive product market, marginal revenue equals price. The *MRP* is therefore equal to $MP \times P$ and is sometimes called the value of the marginal product (*VMP*) in the case of perfectly competitive product markets. The marginal revenue product curve (or *VMP* curve) is the firm's demand curve for labor.

The profit-maximizing hiring decision for *any* factor of production is to hire a factor until the *VMP* (*MRP*) of the last unit hired is equal to the marginal cost of hiring it.



The profit-maximizing hiring decision is to hire units of a factor to the point at which marginal revenue product is equal to the market price of the factor.

For example, hiring workers, like other decisions in microeconomics, requires a comparison of the marginal benefit of the next worker (the MRP_L) to the marginal cost of the next worker. In perfectly competitive labor markets, each unit of labor can be hired at a constant wage W .

Hire a worker if: $VMP_L \geq W$.

Don't hire a worker if: $VMP_L < W$.

Stop hiring workers at the point where: $VMP_L = W$.

The marginal revenue product curve is the demand curve for a factor. It will shift outward if:

- A. the price of the output rises.
- B. other factors become more available.
- C. production technology improves.

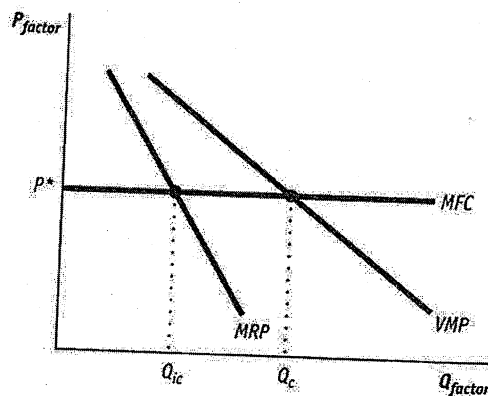
Imperfectly Competitive Firm Facing Competitive Factor Market

Recall that hiring labor under perfectly competitive conditions takes place up to the point at which the value of the added production that results from a worker's production is equal to the marginal cost incurred from hiring that worker.

$$VMP_L = P \times MP_L = W$$

The same is true under imperfect competition except that the marginal benefit received from hiring a worker is not a function of price (P), but of marginal revenue (MR). In imperfect competition, firms base their hiring decisions on the marginal revenue product (MRP).

$$MRP_L = MR \times MP_L = W$$



Imperfectly competitive firms have the ability to set price. When firms have price-setting ability, price must be lowered to increase the quantity sold. This creates a situation in which the price of the last unit sold is greater than the marginal revenue from selling it.

Perfect competition: $P = MR$

Imperfect competition: $P > MR$

Because $MR < P$, it must be the case that $MRP_L < VMP_L$. In a graph, both are downward sloping but the MRP_L will lie below the VMP_L . This means the demand for labor with imperfect competition lies below the demand for labor with perfect competition.

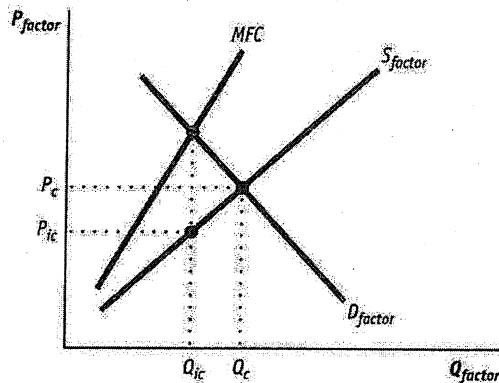
Monopsony in Factor Market

When we assumed a perfectly competitive factor market, we assumed that many small firms could employ as much of a factor as they wished at the prevailing price.

The additional cost of hiring the next unit of a factor, or marginal factor cost (*MFC*) was constant. This meant the supply curve of the factor was a horizontal line at the market price.

When there is one very large firm in the market, it is called a monopsony. To hire more of a factor, a monopsony must increase the price it pays. This is because the factor supply curve is upward sloping.

The price of the factor must be increased for all units so the *MFC* rises as more of the factor is hired.



When a monopsony employer wants to hire one more unit of a factor, it must raise the price it pays. The price must also be increased for the factor units that came before. So when both the product market and the factor market are imperfectly competitive, the firm will still hire up to the point at which the $MRP = MFC$. However, the *MFC* curve will be upward sloping and lie above the supply curve for the factor.

One thing we can see from the graph is that the factor is being paid less than its *MRP*. This is because a monopsony is the sole employer in the factor market. This monopsony power allows them to pay less for factors than if the factor market were perfectly competitive.