

SECTION 13: Factor Markets:

Need to Know:

Four factors of production (“inputs” or “resources”):

- **Labor:** the work done by humans.
- **Land:** resources provided by nature.
- **Capital:** physical capital such as tools, machinery and factories, plus human capital such as education and training.
- **Entrepreneurship:** the talent for taking risks to bring together resources for innovative production

Derived demand – the demand for a factor is derived from a firm’s output choice.

Value of the marginal product of labor = Marginal product of labor x Price of the output

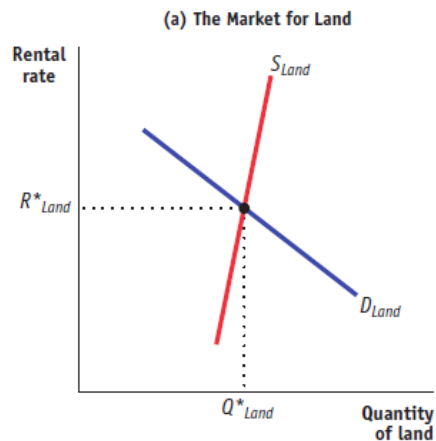
$$VMP_L = MP_L \times P$$

Three external variables that will shift the D curve for a factor: Each of these changes some aspect of VMP.

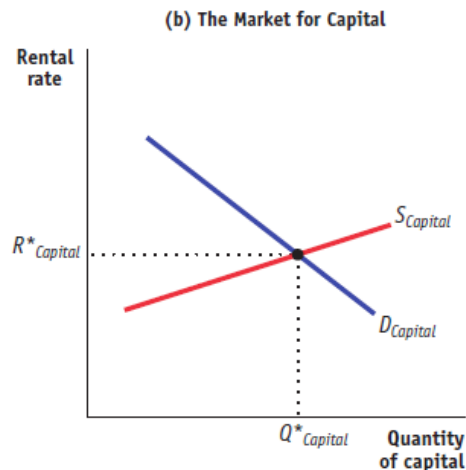
1. Changes in the **prices of goods**
2. Changes in the **supply of other factors** (labor paired with capital (tools), the labor is usually more productive)
3. Changes in **technology**

The price (marginal cost) of capital or land is the rental rate (**R**)

Firms maximize profit where **VMP = R**



The supply of land is **very inelastic** (very steep)



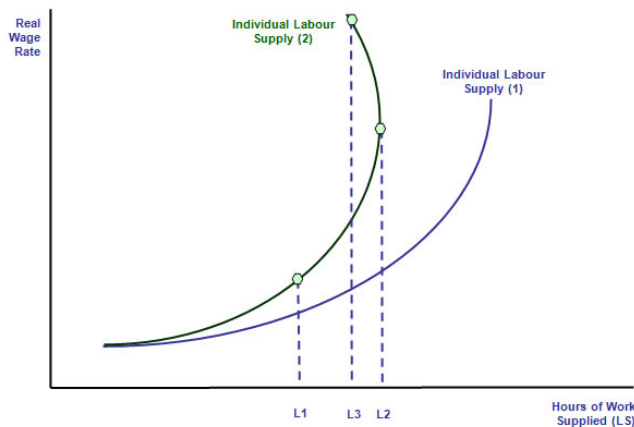
The S curve for capital and land is **elastic**

Labor receives about 70% of total factor income.

$$VMP_L > VMP_{\text{capital or land}}$$

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As the wage rises, the **substitution effect** says “work more” while the **income effect** says “work less”.



If we add up all of the hours each individual supplies at each wage, we will get the market labor supply curve.

Factors that can shift the market supply curve outward or inward.

- Changes in **Preferences and Social Norms**
- Changes in **Population**
- Changes in **Opportunities**
- Changes in **Wealth**

$$\text{VMP} = \text{MP} \times \text{MR}$$

Perfect competition: $P = \text{MR}$ due to price-taking behavior.

Imperfect competition: $P > \text{MR}$ due to price-setting behavior.

With imperfect competition, the value of the marginal product is called marginal revenue product (MRP).

$$\text{MRP} = \text{MP} \times \text{MR}$$

wage takers - additional cost of hiring the next unit of labor, or marginal factor cost of labor (MFC_L) was constant and equal to the wage (supply of labor was a horizontal line at the market wage)

Monopsony – a market in which there is only one buyer; in the labor market it must offer higher and higher wages to attract workers (labor supply curve is upward sloping)

MFC_L rises as more workers are employed, and we can see that the $\text{MFC}_L > W$

According to the marginal productivity theory of income distribution, the division of income among the economy's factors of production is determined by each factor's marginal productivity at the market equilibrium.

Three possible explanations for wage inequality:

1. **Compensating Differentials** (dangerous working conditions, night shift)
2. **Differences in Talent** (sports figures are paid according to record)
3. **Differences in Human Capital** (education level & experience)