Applying Labor Demand

$VMP = MPP \times P$

From Firm Demand to Market Demand

$D_m = D_1 + D_2$

Applications

- Short Run Labor Demand
  - A change in wage rates
  - A change in the price of the product
Applications

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• Long Run Labor Demand

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A Change in the Wage Rate-
Short Run Labor Demand

• When the wage rate is \( w_0 \), \( L_0 \) workers are demanded.

\[
L_0 \quad L
\]

A Change in the Wage Rate-
Short Run Labor Demand

• When the wage rate is \( w_0 \), \( L_0 \) workers are demanded.
• When the wage rate is \( w_1 \), \( L_1 \) workers are demanded.

\[
\begin{align*}
VMP &= MPP \times P \\
L_0 &= L_1
\end{align*}
\]

In short, the lower the wage rate the greater the quantity of labor demanded.
Applying Labor Demand

A Change in the Product Price-
Short Run Labor Demand

• When the wage rate is \(w_o\), \(L_o\) workers are demanded.
• If the price rises to \(P^*\), the VMP curve shifts up and to the right.

\[ VMP = MPP \times P^* \]

The quantity of labor demanded increases to \(L_1\)

The short run means no time to change capital stock.

A Change in the Product Price-
Long Run Labor Demand

\[ \text{Change in Quantity of Labor Demanded} = \text{Substitution Effect} + \text{Scale Effect} \]
A change in the Wage Rate—Long Run Labor Demand

Change in Quantity of Labor Demanded = Substitution Effect + Scale Effect

A fall in the wage rate means increased quantity demand via the substitution effect.

While the scale effect could be negative and theoretically reverse the substitution effect, it is unlikely.

A Change in the Product Price—Long Run Labor Demand

Let’s see what happens when in the long run when the price of a product changes. Initially the firm is employing L* workers.

The Marginal Cost Curve

The Level of Operation is set by MC = P

When P rises, the level of output will increase.

Substitution Effect

There is no substitution effect, but the scale effect is probably positive, so that the higher price probably leads to an increased demand.
End

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