

price elasticity of supply (*PES*)

**measures the responsiveness of
quantity supplied to a
change in price**

Explain the concept of price elasticity of supply, understanding that it involves responsiveness of quantity supplied to a change in price along a given supply curve.

Diagrams

Calculate PES using the equation:

$$\frac{\% \Delta Q_x}{\% \Delta P_x}$$

PES

$\% \Delta Q_x$

$\% \Delta P_x$

Practice

Suppose the price of strawberries increases from €3 per kg to €3.50 per kg, and the quantity of strawberries supplied increases from 1000 to 1100 tonnes per season. Calculate *PES* for strawberries.

$$PES = \frac{\frac{100}{1000}}{\frac{0.50}{3.00}} = \frac{0.10}{0.17} = +0.59$$

Explain, using diagrams and PES
VALUES the concepts of elastic supply, inelastic supply, unit elastic supply, perfectly elastic supply and perfectly inelastic supply

VALUE

PES

VALUE

PES

PES

<

1

INELASTIC

VALUE

PES

PES

>

1

ELASTIC

VALUE

PES

PES

= 1

UNIT ELASTIC

VALUE

PES

$$\mathbf{PES} = 0$$

PERFECTLY INELASTIC

VALUE

PES

PES

=

∞

PERFECTLY ELASTIC

Diagrams

Explain the **DETERMINANTS of PES,
including time, mobility of factors
of production, unused capacity and
ability to store stocks**

DETERMINANTS

of PES

Length of Time

The primary determinant of PES is the amount of time producers have to respond to a price change

THREE TIME PERIODS HELP DETERMINE PES:

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1. MARKET PERIOD

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Immediately after a change in price. Supply is highly inelastic, because firms cannot immediately produce more of a good

Diagrams

THREE TIME PERIODS HELP DETERMINE PES:

2. **SHORT-RUN**

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Firms can use their fixed capital more or less intensively, so supply is more slightly more elastic

Diagrams

THREE TIME PERIODS HELP DETERMINE PES:

3. **LONG-RUN**

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3. **LONG-RUN**

Firms have time to vary the amount of capital they use, so supply is highly elastic.

In the long-run an increase in price will result in a much greater increase in Q_s than in the market period or the short-run

Diagrams

OTHER

DETERMINANTS PES

Mobility of Factors of Production

If resources (land, labor and capital) can be quickly put into or taken out of the production, supply tends to be more elastic

Generally, this applies to low-skilled manufactured goods, the supply of which is more elastic than high-tech, capital-intensive manufactured goods

OTHER

DETERMINANTS PES

Ability to Store Stocks

If large inventories can be kept, producers can respond to price rises by drawing on those inventories to meet rising demand and to price declines by adding to inventories in response to falling demand

Goods which can be stored tend to have more elastic supply than perishable, non-storable goods

Practice

Suppose that in response to an increase in the price of good X from \$10 to \$15 per unit, the quantity of good X produced:

- (a) does not respond at all during the first week,
- (b) increases from 10,000 units to 12,000 units over five months, and
- (c) increases from 10,000 to 18,000 units over two years. Calculate PES for each of these three time periods

(d) How can you account for the difference in the size of the three elasticities

(e) Draw a supply curve that is likely to correspond to each of the three elasticities in a single diagram