# Degrees of costs effectiveness

## *Stupně efektivnosti vlastních nákladů*

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**Abstract:** The article deals with the change of costs and its effect upon the change of profit in the monitored firm. The first part is devoted to the theoretical framework of the area. The formula needed for calculating indicators used are stated and described here and economic effects of the degrees of effectivness are explained by the means of graphs and formulas. The second part gives the definition of the degrees of effectiveness. Each of them is characterised by five items where monitored indicators are evaluated and described on the basis of observed data.

**Key words:** outputs, costs, profit, price, production volume in natural units, cost per unit, differencial cost per unit, differential cost, expense rate, profitability, output index, cost index, change of output, profit change due to outputs, change of costs due to expense rate

**Abstrakt:** Příspěvek se zabývá vlivem změny vlastních nákladů na změnu zisku sledovaného podniku. První část článku je věnována teoretickému vymezení oblasti problematiky. Zde jsou uvedeny a popsány vzorce potřebné pro výpočet používaných ukazatelů a dále je zde na vzorcích a grafech nastíněn ekonomický účinek stupňů efektivnosti vlastních nákladů. Druhá část příspěvku se potom již zabývá samotným vymezením stupňů efektivnosti vlastních nákladů, z nichž každý je charakterizován pěti body, ve kterých jsou vyhodnoceny (na základě skutečně zjištěných údajů) a popsány sledované ukazatele.

**Klíčová slova:** výkony, vlastní náklady, zisk, cena, objem produkce v naturálních jednotkách, jednotkový náklad, jednotkový přírůstkový náklad, diferenciální náklad, nákladovost, rentabilita, výnosnost, index výkonů, index vlastních nákladů, změna vlastních nákladů, změna výkonů, změna zisku vlivem výkonů, změna vlastních nákladů vlivem nákladovosti

One of the frequently occurring problems in the process of the production economy evaluation in a business is to determine if an increase in production volume is economically effective. Primary information of this kind can be provided on the basis of determining the degrees of costs effectiveness.

The degrees of cost effectiveness express qualitatively different trends of development considering production volume and costs interrelation. These trends influence essential changes in the dynamics of profitability rate, profit (loss) volume and production volume.

The degrees of costs effectiveness can facilitate the evaluation of the effectiveness of costs development within the whole enterprise, its organizational units or particular branches (outputs).

### EXPRESSING THE DEGREES OF COST EFFECTIVENESS IN KIND AND IN VALUE

The influence of costs on the dynamics of production volume can be investigated according to the following points of view which specify:

1. Whether the volume of production is expressed in natural (physical) or monetary units. If it is expressed in monetary units, we speak about the value degree of cost effectiveness, if in natural units, about the natural degree of costs effectiveness.
2. What is the focus of interest. If it is an organizational unit, we speak about the effectiveness of costs of an organizational unit (such as enterprise, production plant or centre). If the objective of assessment is a branch (e.g. job order), we speak about the effectiveness of the job order costs.

The effectiveness of costs of an organizational unit can be characterised according to the following criteria:

1. It is usually monitored in value.
2. It facilitates the evaluation of costs of varied (heterogeneous) production.
3. Increase in costs effectiveness need not be caused only by a more intensive production. It can also result from higher efficiency of capital (i.e. higher productivity or lower technological equipment of labour).
4. The whole organizational unit serves as a control basis.

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5. Higher effectiveness of costs can be caused by a change in production structure and in market prices.

The effectiveness of costs in a branch has the following characteristics:

1. The effectiveness can be is expressed in both physical and monetary terms. Expression in value has a broader analytical content as it also includes the influence of the conditions of production (mainly prices).
2. Natural expression of cost effectiveness requires homogeneous production.
3. An increase in cost effectiveness results mostly from an increase in production volume though even lowering costs has an important role in higher overall effectiveness.

**Indicators used**

For the assessment of actual cost effectiveness, it is possible to use the following indicators:

$V_1, V_0$ Revenue or differently measurable volume of production in monetary units in period 1 and 0.

$Q_1, Q_0$ Volume of production in physical units in period 1 and 0.

$VN_1, VN_0$ Costs in period 1 and 0.

$Z_1, Z_0$ Profit in period 1 and 0.

$jN_1, jN_0$ Unit cost in period 1 and 0.

$$jN1 = \frac{VN1}{Q1}, \quad jN0 = \frac{VN0}{Q0}$$

$n_1, n_0$ Cost/revenue ratio in period 1 and 0.

$$n1 = \frac{VN1}{V1}, \quad n0 = \frac{VN0}{V0}$$

*jdN* Differential cost per unit

$$jdN = \frac{VN1 - VN0}{Q1 - Q0}$$

*dN* Differential cost

$$dN = \frac{VN1 - VN0}{V1 - V0}$$

$r_1, r_0$ Profit/cost ratio in period 1 and 0.

$$r1 = \frac{V1 - VN1}{VN1} \cdot 100, \quad r0 = \frac{V0 - VN0}{VN0}$$

$v_1, v_0$ Profit/revenue ratio in period 1 and 0.

$$v1 = \frac{V1 - VN1}{V1}, \quad v0 = \frac{V0 - VN0}{VN0}$$

$OR_1, OR_0$ profitability volume in period 1 and 0.

$$OR_1 = r_1 \times VN_1, \; OR_0 = r_0 \times VN_0$$

**Economic effect of the degrees of cost effectiveness**

The economic effect of the degrees of cost effectiveness can be expressed by absolute change of costs, relative change of costs and effect from extended production.

*Absolute change of costs*

This change is given by the relationship

$$\Delta VN = VN_1 - VN_0$$

where $\Delta VN$ = absolute change of costs.

Absolute change of costs expresses the evaluation of costs dynamics regardless of the volume of production. This also represents a limitation for such evaluation. We can view absolute savings of costs as positive when the production volume remains unchanged or when it is growing. The evaluation of the overrun of costs will be negative when the volume of production remains unchanged or decreases. What is ambiguous is the evaluation of the overrun of costs at the increase of production volume, and the decrease of costs at the decrease of production. In these cases, the main problem is to assess the adequacy of this increase or decrease.

*The relative change of costs*

The relative change of costs issues from the adequacy of costs relative to production volume. It is possible to record the relative change of costs to production volume both in physical and monetary units.

The relative change of costs due to a change of unit cost ($\Delta VN/jN$).

This change can be calculated by the formula:

$$\Delta VN/jN = (jN_1 - jN_0) \times Q_1$$

The relative change of costs due to a change of cost/revenue ratio ($\Delta VN/n$).

It is possible to calculate this modification using the formula:

$$\Delta VN/n = (n_1 - n_0) \times V_1$$

*Evaluation of the relative change of costs*

Zero relative change of costs means that the costs are proportionally rising with the production volume. The consequence of this relation is that the unit cost (in natural effectiveness rate) and the cost/revenue ratio (in

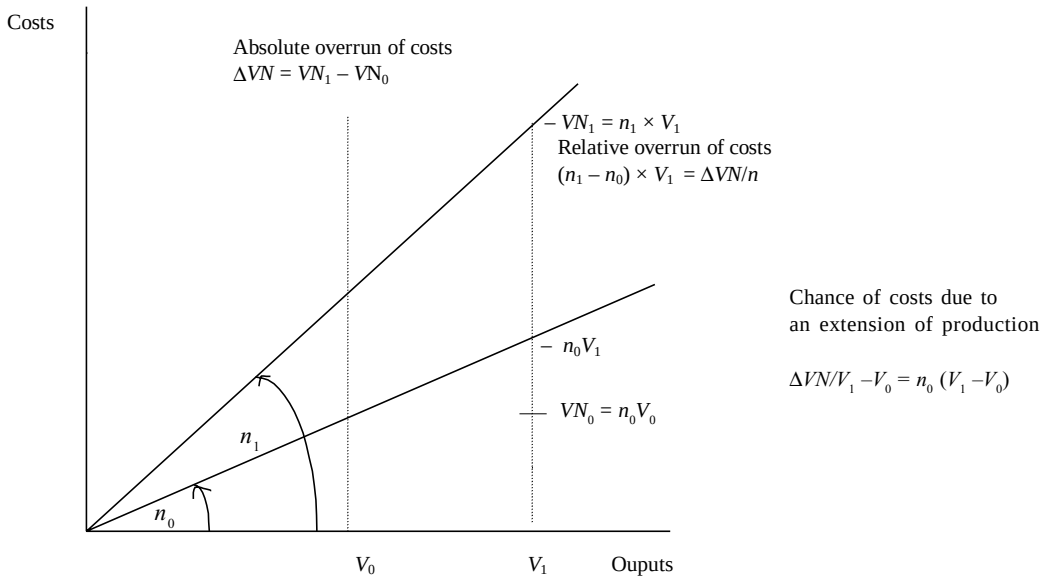


Figure 1. Absolute and relative overrun of costs where their effectiveness is decreasing

value effectiveness rate) do not change. Zero relative change of costs is a characteristic of the development of classically extensive production.

It is based on the following relationship: if the production increases *k*-times, the costs will increase *k*-times as well.

A positive value in the relative change of costs due to a change of unit costs and a change of cost/revenue ratio brings about a relative overrun of costs, which means, under the same conditions, a decrease in income.

A negative value in this change means a relative decrease in costs and thus an increase in income.

From the chart (Figure 1) referred to above, it is obvious that the absolute overrun of costs is higher than the relative overrun of costs. The difference is a change of costs due to the extension of production.

Relative savings mean that costs are increasing more slowly than the production volume. In consequence of this fact, the unit cost or cost/revenue ratio is decreasing. It is possible to explain the relative overrun of costs in a similar manner.

Relative changes of costs owing to a change of unit costs can be reached due to a change in costs (increase or decrease), and due to a change of physical production volume. The conditions of implementation, of course, do not have an effect upon this change.

Relative change of costs owing to a change of cost/revenue ratio include relative changes of costs owing to

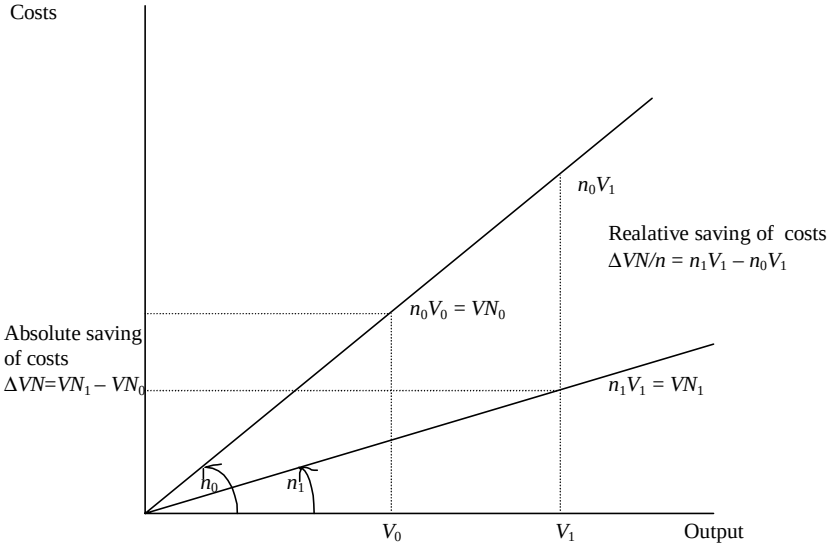


Figure 2. The relationship between absolute and relative savings of costs

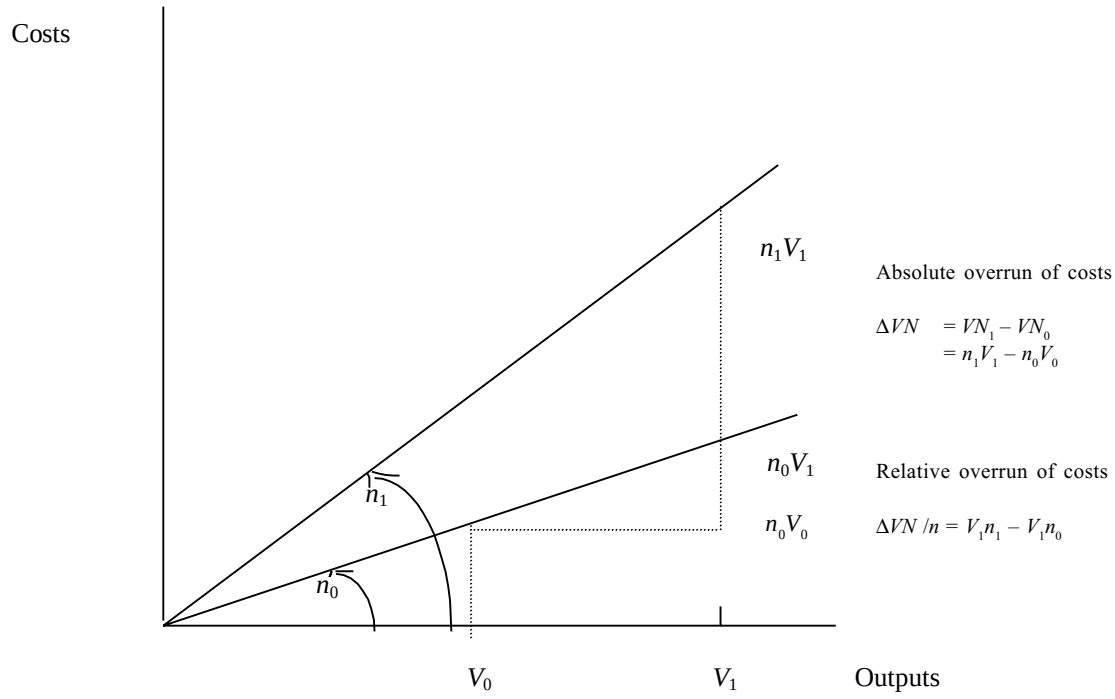


Figure 3. Absolute and relative overrun of costs where they are decreasingly effective

unit costs but, in addition, also the conditions of implementation (a change of market price, a change of pricing of an intermediate product, marketability coefficient and selling costs).

*Relative change of the income due to market price*

If we compare the relative change of costs due to a change of unit costs with the relative change of costs due to a change of cost/revenue ratio, we are able to express the influence of implementation conditions on the economic income creation according to:

$$\Delta Z/c = \Delta VN/jN - \Delta VN/n$$

where $\Delta Z/c$ = relative change of income due to the average market price.

The relative change of income due to the market price can be expressed according to the following formula:

$$\Delta Z/c = \Delta VN/jN - \Delta VN/n$$

$$\Delta Z/c = \left(\frac{VN1}{Q1} - \frac{VN0}{Q0}\right).Q1 - \left(\frac{VN1}{Q1.c1} - \frac{VN0}{Q0.c0}\right).Q1.c1$$

$$= \left(VN1 - VN0 \times iQ\right) - \left(VN1 - VN0 \times iQ \times ic\right)$$

where $iQ = \frac{Q1}{Q0}$, $ic = \frac{c1}{c0}$

$$= VN_1 - VN_1 - VN_0 \times iQ + VN_0 \times ic \times iQ$$

$$= VN_0 \times iQ\ (ic - 1)$$

$$= VN0 \times \frac{Q1}{Q0}\left(\frac{c1}{c0} - 1\right)$$

$$= VN0 \times \frac{Q1}{Q0}\left(\frac{c1 - c0}{c0}\right)$$

$$= VN_0\ iQ \times ic - VN_0 \times iQ$$

The relative change of the income results from the modification of calculated costs ($VN_0 \times iQ$) by the price index.

*Change in income caused by change in production volume*

Defining this change we suppose that a change in production volume is accompanied by constant effectiveness of costs connected with constant costs per unit (as for the physical degree of cost effectiveness) and with a constant cost/revenue ratio (as for the value degree of costs). The rise in profit volume is then proportional to the profit/revenue ratio and the increase (decrease) in productivity volume.

$$\Delta Z/V_1 - V_0 = (1 - n_0) \times (V_1 - V_0)$$

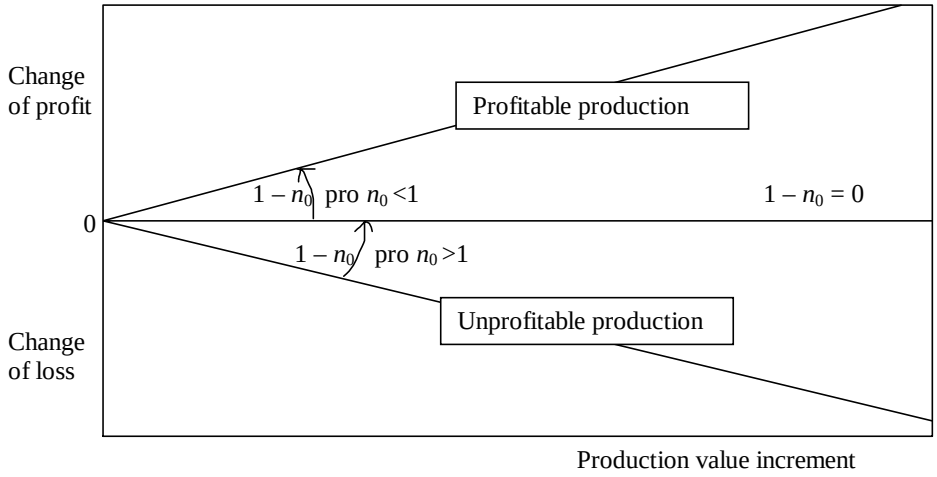


Figure 4. The change of profit depending on the profitability of production

when $\Delta Z/V_1 - V_0$ = change of income caused by change of outputs.

A positive value for this expression means profit increment, a negative value loss increment.

Similarly we can define the profit increment for physical expression of effectiveness:

$$\Delta Z/Q_{1\_}Q_2 = (\text{price} - jN) \times (Q_1 - Q_0)$$

*Summarized expression of income change*

The total change of income can be expressed as the difference in the income in the control period and in the period to be compared.

$$\Delta Z = Z_1 - Z_0$$

This change can be described as the change caused by the the change of productivity volume and the relative change of costs influenced by the rate.

$$\Delta Z = \Delta Z/V_1 - V_0 - \Delta VN/n$$

$$= n_0 (V_1 - V_0) - (n_1 - n_0) V_1$$

The relative change of income under the influence of the cost/revenue ratio can be understood as the relative change of income caused by costs per unit and the relative change of income caused by average market price

$$+ \Delta Z/n = -\Delta VN/jN + \Delta Z/c$$

where $\Delta Z/n$ = change of income under the influence of the cost/revenue ratio.

## DEGREE OF COSTS EFFECTIVENESS

Seven basic degrees of cost effectiveness can be defined based upon the relationship between the production volume and the dynamics of costs:

### Characteristics of various degrees of costs effectiveness

It is useful to divide each characteristic into three problem areas:

1. **The expression of the relationship between single indicators** which help to identify the appropriate degree of effectiveness very easily and reliably.
   We use the relationship between index numbers and increments of production volume and costs, and, respectively, the relationship between the development of differential costs and cost/revenue ratio (between differential costs per unit and costs per unit).
2. **Various degrees of costs effectiveness and their impact on development of resulting indicators.** We will evaluate the impact of effectiveness degrees on the cost/revenue ratio, profit/cost ratio and profitability volume.
3. **Total economic evaluation of various degrees of costs effectivenes.** It will also be useful to compare value and the physical degree of effectiveness of costs.
   The degrees of effectiveness of costs stated above are based on the condition that costs in the period to be compared are higher than in the control period. The description of various degrees of effectiveness focuses on the typical behaviour of income when the production stays profitable in the control period. Different levels of profitability (profitable production, production with zero profitability and unprofitable production) create different economic effects for various degrees of costs

effectiveness. That is why we also state specific properties of these effectivenes degrees depending on profitability in the control period.

**Degree of increasing effectiveness of real actual costs in connection with an increasing profitability ratio**

Indication:
The index of outputs is higher than the index of costs
value index $iV > iVN$
physical index $iQ > iVN$

Consequences:
1. The output increment is (when $r_0 > 0$) higher than the increment of costs
   value $\Delta V > \Delta VN$
   physical $\Delta Q \times c > \Delta VN$ $c$ = price
2. Differential cost is smaller than the cost/revenue ratio.
   value $dN < n$
   physical $jdN < jN$
3. The cost/revenue ratio is decreasing with the increase in outputs
   value $n_1 < n_0$
   physical $jN_1 < jN_0$
4. The profit/cost ratio is increasing with the increase in productivity volume
   value $r_1 > r_0$
5. Relative savings of costs and profit increment (loss) from production expansion create the resource of economic effect.

The impact of relative savings of costs and profit increment caused by production expansion depends on the overall profitability in the control period
1) As for profitable production ($n_0 < 1$, resp. $jN_0 < c$), the overall profit increment is reached by the total sum of both effects (relative savings of costs and profit increment from production expansion)
   It can be said then

$$\Delta Z = \Delta Z/V - \Delta VN/n$$

   A decreasing cost/revenue ratio within the first degree of effectiveness results in a progressive increase in profit volume.
2) As for production with zero profitability ($n_0 = 1$, resp. $jN_0 = c$), the overall profit increment is created only by relative savings of costs.
   It is true

$$\Delta Z = - \Delta VN/n$$

   Also in this case, the profit volume is increasing progressively. Its volume compared to profitable production is smaller.
3) As for unprofitable production ($n_0 > 1$ resp. $jN_0 > c$), the total increment of profit (or of loss) is given by the sum of production expansion loss and costs savings under the impact of a decrease in the cost/revenue ratio. Resulting profit (or loss) depends on the proportion of both effects.
   A decreasing cost/revenue ratio within the first effectiveness degree results in a decrease in unprofitable production.
   In connection with this fact it is useful to fulfill two requirements which help stop unprofitable production.
   a) Firstly, the loss on production expansion should be compensated for by the savings of costs caused by a lower expense rate and thus the loss in the compared period would be the same as in the control period.
      It is true under the condition that

$$V_1 = V_0 + \Delta VN$$

   – In case, that $V_1 < V_0 + \Delta VN$, the loss on production volume expansion is higher than the savings of costs. The total loss is going up.
   – Contrary to this if $V_1 > V_0 + \Delta VN$, the total loss is going down because the savings of costs caused by a lower expense rate is higher than the loss on the production volume expansion.
   b) Secondly, the profitability in the compared period should be of zero value, which means the profit in the compared period should equal zero. Then the outputs in the compared period have to be the same as the costs in the compared period

$$\text{or} \qquad iV = \frac{VN_1}{V_0}$$

      In this case, the loss in the control period plus the loss increment caused by production expansion is compensated for by the savings of costs caused by a lower cost/revenue ratio.
      It is then true:

$$Z_0 + \Delta Z/V = \Delta VN/n$$

      If $V_1 < VN_1$, resp. $iV = \frac{VN_1}{V_0}$, than the loss in the control period plus the loss increment caused by production expansion is higher than savings costs caused by a lower cost/revenue ratio. The result is a decrease in unprofitable production in the compared period.
      For the opposite inequality $V_1 > VN_1$, resp. $iV = \frac{VN_1}{V_0}$, savings of costs are higher under the impact of their higher effectiveness.

Economic evaluation:
The realization of this effectiveness degree of costs is connected with the positive development of all monitored indices and it is highly effective for business. The progressiveness of profit increment is in proportion to the increase in the profitability rate.

**Degree of constant effectiveness of costs**

Indication:
The output index is the same as the costs index
value index $iV = iVN$
physical index $iQ = iVN$
Effects:
1. The relationship between the output increment and increment is shown by:
value $\Delta V = \Delta VN \times (r + 1)$
physical $\Delta Q \times c = \Delta VN \times (r + 1)$
2. Differential costs are the same as the cost/revenue ratio in the control period
value $dN = n_0$
physical $jdN = jN_0$
3. The cost/revenue ratio does not change when production is increasing
value $n_1 = n_0$
physical $jN_1 = jN_0$
4. The profit/revenue ratio stays the same when production volume is increasing
value $r_1 = r_0$
5. The change of profit volume is caused by the profit (or loss) on production expansion

$\Delta Z = \Delta Z/V$

and it depends on the profit/ revenue ratio in the period compared.

1) In case of profitable production ($r > 0$), the profit increment will be higher than costs increment. The higher the profitability in the control period the higher will be the profit on production expansion

$\Delta Z = \Delta Z/V = (1 - n_0) \times \Delta V$

$\Delta Z = \Delta Z/V = r_0 \times \Delta VN$

2) In the case of production with zero profitability ($r = 0$), the output increment will always be identical with the costs increment.
3) In the case of negative profitability ($r < 0$), the output increment will be lower than costs increment. Together with production expansion, the loss will be going up and it will be directly proportional to the loss rate and the increase in costs.
All three alternatives can be plotted (Figure 5).
It is important to remember that the output index is very rarely the same as the costs index.That is why we can also speak about the constant effectiveness of costs in cases where indicators are only relatively closed to the reqiured value.

Economic evaluation:
The realization of this degree of effectivenes of cost corresponds with extensive production growth. The increase in production volume is not accompanied rationalizing elements connected with a lower cost/revenue

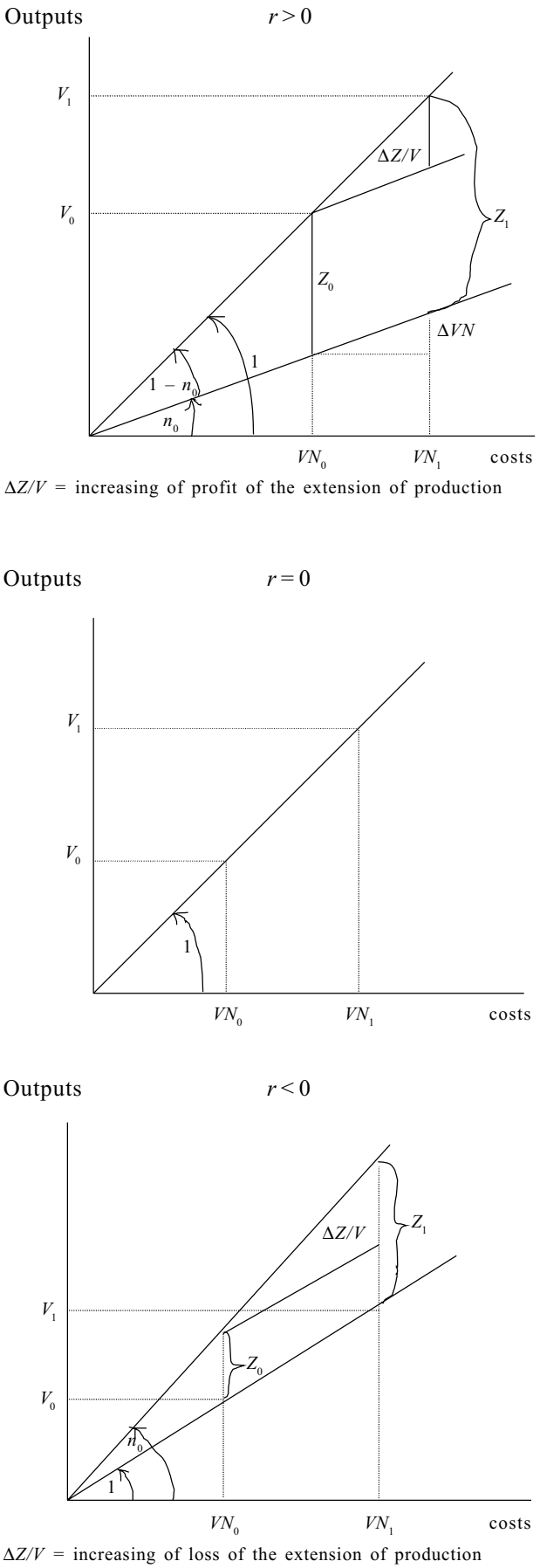


Figure 5. Degree of effectiveness constant

ratio (resp. costs per unit). The profit increment is in proportion to the production and profitability rate in the control period. The low profitability or even loss production prevent us from using this effectivenes degree in practice.

**Decreasing effectiveness degree of costs connected with a degressive increase in profit volume**

Indication:

The output index is lower than the index of costs and higher than the proportion of the costs increment and production volume in control period extended by unit.

$$1+\frac{\Delta VN}{V_0} < iV < iVN$$

$$1+\frac{\Delta VN}{Q_0 \times c} < iQ < iVN$$

Effects:

1. The relation between the output increment and costs increment is given by
   value degree $\Delta VN < \Delta V < \Delta V\mathrm{N} \times (r+1)$
   physical degree $\Delta VN < \Delta Q \times c < \Delta VN \times (r+1)$
2. The differential cost is higher than the cost/revenue ratio in the control period and lower than 1
   value degree $n_0 < dN < 1$
   physical degree $jN_0 < jdN < c$
3. The cost/revenue ratio of production is increasing together with the increase in outputs
   value $n_1 > n_0$
   physical $jN_1 > jN_0$
4. The profitability rate is decreasing together with the increase in production volume
   value $r_1 < r_0$
   This degree of costs effectivenes can be realized only with profitable production in the control period ($n_0 < 1$).
5. The change of the profit volume is caused by the profit on production expansion which is reduced by the relative increase in costs under the influence of a higher cost/revenue ratio.
   Since the differential cost is lower than 1, the relative exceeding of costs does not take the profit on production expansion. That is why the total profit with this effectiveness degree always increases but its increments have degressive character. The degression rate depends on to what extent the differential cost approaches one.

Economic evaluation:

The realization of this degree of costs effectiveness usually corresponds with the exhaustion of sources of cutting costs or the lack of economy in production.

Taking into consideration that the profit volume is going up together with the increase in production, this degree of effectivenes can be realized under certain conditions of economic strategy.

**Decreasing effectiveness of costs connected with constant profit volume**

Indication:

$$1+\frac{\Delta VN}{V_0} = iV < iVN \quad \text{resp.} \quad 1+\frac{\Delta VN}{Q_0 \times c} = iQ < iVN$$

Effects:

1. The outputs increment is the same as the costs increment
   value degree $\Delta V = \Delta VN$
   physical degree $\Delta Q \times c = \Delta VN$
2. The differential cost equals one. Cost per unit equals production price
   value degree $n_0 < dN = 1$
   physical degree $jN_0 < jdN = c$
3. The cost/revenue ratio of production is increasing with the increase in outputs
   value $n_0 < n_1$
   physical $jN_0 < jN_1$
4. The production volume is increasing while the profitability rate is decreasing
   value $r_0 > r_1$
   (This degree of effectiveness of costs can be realized only in profitable production in the control period.)
5. In this case the profit on production expansion is fully siphoned off by the overrun of costs owing to the higher cost/revenue ratio and it results in constant profit which equals the profit in control period.

Economic evaluation:

The realization of this degree of effectiveness of costs is connected only with favourable increase in production volume. Other economic parameters are developing badly. Temporary realization of this effectiveness degree of costs is justified owing to the constant profit volume.

**Decreasing effectiveness of connected with decreasing profit volume**

Indication:

$$1 < iV < 1+\frac{\Delta VN}{V_0} < iVN \quad \text{resp.} \quad 1 < iQ < 1+\frac{\Delta VN}{Q_0 \times c} < iVN$$

Effects:

1. The output increment is lower than the costs increment
   value degree $\Delta V < \Delta VN$
   physical degree $\Delta Q \times c < \Delta VN$
2. The differential cost is higher than one. The differential cost per unit is higher than the price
   value degree $dN > 1$
   physical degree $jdN > c$
3. The costs/revenue ratio is increasing together with the increase in production
   value degree $n_1 > n_0$

physical degree $jN_1 > jN_0$

4. Profitability rate and volume are decreasing while the production volume is increasing
   value degree $r_1 < r_0, OR_1 < OR_0$
5. This degree of effectiveness is accompanied by either decreasing profit volume or increasing loss. It depends on the profitability rate in the control period.
   a) In case of profitable production ($r_0 > 0$) the profit on production expansion is not high enough to compensate the relative overrun of costs owing to the higher cost/revenue ratio and so it results in a decrease in profit.
   b) In case of production with zero profitability ($r_0 = 0$) the loss in production equals the relative overrun of costs owing to this degree of effectiveness. The loss is going up together with proportionately increasing cost.
   c) In the case of loss production ($r_0 < 0$) the increasing loss is caused by the sum of loss on production expansion plus the relative overrun of costs owing to the higher cost/revenue ratio. Increasing costs are connected with progressive increase in loss. It is useful to set up such an output index which enables zero profitability in the control period.It is true under the condition that

$$1 < \frac{V_1}{V_0} = \frac{VN_1}{V_0}$$

In this case, the loss in the control period plus the loss increment owing to the production expansion is compensated for by the relative savings of costs owing to a lower cost/revenue ratio.

$$\text{If} \quad 1 < \frac{VN_1}{V_0} = \frac{V_1}{V_0}$$

then the result is the profit in the compared period.

**Decreasing effectiveness of costs connected with constant production volume**

Indication:

$1 = iV < iVN$ resp. $1 = iQ < iVN$

Effects:

1. The profit increment equals zero and is lower than the costs increment
   value degree $0 = \Delta V < \Delta VN$
   physical increment $0 = \Delta Q \times c < \Delta VN$
2. The differential cost and the differential cost per unit is not defined for this case.
3. The cost/revenue ratio is increasing
   value degree $n_1 > n_0$
   physical degree $jN_1 > jN_0$
4. The profitability rate and volume are decreasing
   value degree $r_1 < r_0, OR_1 < OR_0$
5. The loss growth is the by-product of this effectiveness degree.The profit (loss) on production expansion equals zero for profitable production, production with zero profitability and for unprofitable production. The loss growth is the result of relative overrun of costs corresponding with their decreasing effectiveness.

Economic evaluation:

The realization of this effectivenes degree is not economically effective in any type of production. The effectiveness degree mentioned here could be the result of both the lack of economy and the exhaustion of production resources growth.

**Decreasing effectiveness of costs connected with decrease in production**

Indication:

Production volume is decreasing of costs are increasing

$iV < 1 < iVN$ resp. $iQ < 1 < iVN$

Effects:

1. The output increment is negative, the costs are increasing
   value degree $\Delta V < 0 < \Delta VN$
   physical degree $\Delta Q \times c < 0 < \Delta VN$
2. The differential cost is negative
   value degree $dn < 0$
   physical degree $jdN < 0$
3. The cost/ revenue ratio is increasing together with an increase in costs
   value degree $n_1 > n_0$
   physical degree $jN_1 > jN_0$
4. Profitability rate and volume are decreasing together with a decrease in production
   value degree $r_1 < r_0, OR_1 < OR_0$
5. The by-product of this effectiveness degree is a decrease in profit (increase in loss)

Decreasing production volume always results in a loss which is extended by the overrun of costs.

a) In the case of profitable production ($r_0 > 0$ ) with decreasing production volume, the profit in the control period is decreasing. This decrease is caused by the loss from decreasing production volume and is multipled by the relative overrun of costs.
b) In the case of production with zero profitability ($r_0 = 0$) the increase in loss is in direct proportion to the relative overrun of costs.
c) In the case of loss production ($r_0 < 0$) the loss in the control period is decreasing together with decreasing production volume and on the other hand it is extended by the relative overrun of costs.

Economic evaluation:

The increasing of costs has negative effects from the point of view of both increasing loss and decreasing production volume.

Defined degrees of costs effectiveness sort deal with the effects of intensity of agrarian production and assess their impact on the development of basic economic indicators.Besides acting as a guide for the economic evaluation of production volume growth, they also make it possible to evaluate the effectiveness of an increase in the factors of intensification.

## CONCLUSION

Based on simple indicators (ie. comparison indexes of outputs, costs indexes and absolute change of outputs of costs), it is possible take out particular degrees of effectiveness of costs, which make possible a prompt orientation in the dynamics of agricultural enterprices.

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