

Variable Costs Method. Application Variants Adapted to Romanian Accounting Plan

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***Abstract.** This article describes the variable costs method and its adaptation possibilities to the Romanian general accounting plan. There are described the three variants of the variable costs method and presented the methodological stages that are passing through managerial accounting using the 9th class “Management accounts”. The article is ending with the advantages and disadvantages of adaptation of variable costs method to the Romanian general accounting plan.*

Keywords: variable costs, period costs, accounting plan, raw profit contribution, internal offset.

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JEL Codes: M21, M41.

REL Codes: 7C, 14I.

1. Variable costs method. General features

The essence of this method consists in separation of production and marketing and sales costs, in rapport with their character toward variation of physical volume of production and marketing and sales, into variable and period costs and considering for unitary cost calculation only the variable costs; period costs are deducted from the financial gross result of the enterprise. The method accentuates the sale's impulsion as result of period costs amount is not distributing over stockage (execution products, finite products, forward products but not received) it have been covered by the period sales. Obtaining of maximum economic-financial results imposes optimization of price-cost-volume of production (sales) correlation. This correlation is expressed with help of indicators such as: equilibrium point (known as dead point or rentability point), covering point, and dynamic safety coefficient and safety interval.

2. Adaptation possibilities of the general accounting plan to the variable costs method

The economical content and accounting correspondences between accounts of the 9th class "Management accounts" standardized by the Romanian accounting laws are satisfying only the necessities of the full costing calculation organizational methods and less the partial costing methods. The necessities which reclaim the partial costing calculation method, variable costs method, are referring to some 9th class accounts that must be adapted in denomination and content

according to the specific of the method. The developed variant of the managerial accounting proposes the following objectives: analytical evidence of the stockage and analytical calculation of the costs and results on value carriers (products, works and services).

It has been made the changing denominations of some accounts foreseen in the developed variant of the managerial accounting for surprising as well as it get the economical content and essence of the used accounts by the variable costs method. Also, some accounting correspondences must be adapted for the following manner⁽¹⁾:

921 Account "Main activity expenses" will reflect the variable expenses of these activities under the denomination of 921 "Variable expenses". This account will be developed analytically in function of activity type in:

921.01 "Variable production expenses";

921.02 „Variable marketing and sales expenses”.

Each of these accounts will be divided in the second degree operational accounts on primary expenses elements or calculation articles, formed from variable expenses.

923 Account "Indirect expenses" will reflect the semi-variable expenses under the denomination 923 "Semi-variable expenses" because the overhead expenses ensued to be allocated over costs formed from variable expenses. This account is imposing to be detailed in second degree operational accounts in the same way as the variable expenses accounts: both on primary expenses elements and calculation articles formed from these overhead production expenses. The separation of the semi-variable expenses in

variable and period will be realized with the extreme point proceeding.

Account 924 “General management expenses” will reflect the period expenses no matter of place or outgoing area under the denomination of 924 “Period expenses”. Embracing the evolved variant of the variable costs method (with the 5th levels of internal offset of the period expenses) we are proposing the following analytics for this account:

924.01 „Period product expenses”;

924.02 „Period place expenses”;

924.03 „Period departments’ expenses”;

924.04 „Period marketing and sales expenses”;

924.05 „Period management expenses”.

931 Account “Manufactured output cost” will reflect the volume of the revenues that will be taken over from the financial accounting under the denomination of 931 “Manufactured output revenues”. It has been chosen for this denomination because the specific of the variable costs method imposes pursuing the obtained revenues through managerial accounting of the costs. According to the specific of this method and not only because recording of some deviations between the obtaining production moment and its delivery moment it is imposing introduction into the managerial accounting of the stockage and price differences accounts prevised in the developed variant as it follows:

9445 „Finite products”;

9448 „Product cost differences”.

With the help of these accounts will be evidenced the obtained and unsold product stockage at antecalculate variable costs reflecting in a corresponding way and the differences between antecalculate and

effective variable costs. The recording of price differences afferent to sold out product will be calculate with the help of allocation coefficient of the price differences (K_{9448}), calculated as:

$$K_{9448} = \frac{Si_{9448} + Rd_{9448}}{Si_{9445} + Rd_{9445}},$$

where:

$$Rc_{9448} = Rc_{9445} \times K_{9448} .$$

If the evidence of the obtained product stockage it will be carried on in effective variable costs, the 9448 account “Product cost differences” remains without object.

903 Account “Internal offset for price difference” will reflect raw contribution after each step of period expenses internal offset under denomination of 903 “Internal offset regarding raw contribution”. Also, it can be used and for raw economical-financial result formation of the enterprise.

901 Account “Internal offset for expenses” will be entitled 901 “Internal offset for expenses and revenues” and will reflect through its credit taking over of the expenses and through its debit taking over of the revenues from the financial accounting into the managerial accounting. Still in its debit should pursue for taking over at the end of the month and the raw economic-financial result.

3. Variable costs method typology

The variable costs method knows three variants: *simplified*, *evolved* and *period expenses covering calculation*.

A. Variable cost method. Simplified variant

Beside general features specifically to variable costs method, the simplified variant

consists in effectuation of calculation and analysis of production expenses in rapport with their character on main economic processes, respective production and marketing and sales, and inside on its based components⁽²⁾. The variable expenses afferent to each product is calculated and analyzed separately for the production process and, respectively, marketing and sales process, and inside of it on base main components. This thing gives the opportunity for determination of profit raw contribution from production and profit raw contribution from marketing and sales. The period expenses is determining on main processes that is occasioned them, respectively, production, marketing and sales and management, and base components, namely productive indirect personnel salaries expenses and other that is influencing the profit raw contribution for determining the final result.

The steps through stages for unrolling calculation works are:

1. Determination of product and enterprise marketing and sales:

$$d_i = P_{v_i} \times Q_i \text{ sau } D_T = \sum d_i,$$

where:

d_i = marketing and sales afferent to „i” product;

Q_i = quantity afferent to „i” product;

P_{v_i} = unitary marketing and sales price afferent to „i” product;

D_T = total marketing and sales (unity level).

2. Determination of production variable expenses:

$$CHV_{p_i} = \sum_{a=1}^n CHa_i \text{ sau } CHV_{p_t} = \sum CHV_p,$$

where:

CHV_{p_i} = production variable expenses afferent to „i” product;

CHa_i = expenses afferent to „i” product on calculation articles structure;

CHV_{p_t} = total production variable expenses (unity level).

3. Determination of marketing and sales variable expenses:

$$CHV_{d_i} = \sum_{a=1}^n Cha_i \text{ sau } CHV_{d_t} = \sum CHV_D,$$

where:

CHV_{d_i} = marketing and sales variable expenses afferent to i” product;

Cha_i = expenses afferent to product on calculation articles structure;

CHV_d = total marketing and sales variable expenses.

4. Determination of total variable expenses: $CHV_T = CHV_p + CHV_D$.

5. Determination of raw profit production contribution:

CBP from production = Marketing and sales – CHV_p .

6. Determination of raw profit marketing and sales contribution:

CBP from marketing and sales = CBP from production - CHV_D .

7. Determination of period expenses:

$$CHfixe_T = Chfixe_{(p)} + Chfixe_{(D)} + Chfixe_{(A)},$$

where:

$CHfixe_T$ = total period expenses;

$Chfixe_{(p)}$ = production period expenses;

$Chfixe_{(D)}$ = marketing and sales period expenses;

$Chfixe_{(A)}$ = management period expenses.

8. Determination of the final result:

Final result = CBP from marketing and sales – $Chfixe_T$.

The methodological stages which are passing through managerial accounting are the following:

Stage	Debit	=	Credit
1. Registration of the variable expenses (production and marketing and sales):	921 „Variable expenses”	=	901 „Internal offset for expenses and revenues”
2. Registration of period expenses:	924 „Period expenses”	=	901 „Internal offset for expenses and revenues”
3. Registration of semi-variable expenses:	923 „Semi variable expenses”	=	901 „Internal offset for expenses and revenues”
4. Registration of separation of semi variable expenses in: variable and period ⁽³⁾ .	921 „Variable expenses” 924 „Period expenses”	=	901 „Internal offset for expenses and revenues”
5. Calculation and registration of unity obtained production. Whole obtained quantity is registering at antecalculate cost:	9445 „Finite products”	=	902 „Internal offset for obtained production”
6. Offset effective variable expenses (production and marketing and sales):	902 „Internal offset for obtained production”	=	921 „Variable expenses”
7. Registration of cost differences afferent to the products, at the end of the month: (effective cost – antecalculate cost)	9448 „Product cost differences”	=	902 „Internal offset for obtained production”
8. Registration of revenues afferent to the sale production:	901 „Internal offset for expenses and revenues”	=	931 „Revenues of obtained production”
9. Management discharging of the finite sale products:	931 „Revenues of obtained production”	=	9445 „Finite products”
10. Registration of price differences afferent to sold out quantities based on it allocation coefficient:	931 „Revenues of obtained production”	=	9448 „Product cost differences”
11. Registration of raw profit contribution (marketing and sales – variable expenses):	931 „Revenues of obtained production”	=	903 „Internal offset regarding raw contribution”
12. Registration offset period expenses:	903 „Internal offset regarding raw contribution”	=	924 „Period expenses”
13. Registration of obtaining result (raw contribution – period expenses):	901 „Internal offset for expenses and revenues”	=	903 „Internal offset regarding raw contribution”

B. Variable costs method. Evolved variant

It supposes calculation of raw profit contribution in stages, in function of organizational levels and introduction of standards and expenses budgets. The levels offset period expenses are constituted considering processes that occasioned it (production, marketing and sales, management). For offset of the period expenses, in practice is constituted five levels: product, place, department, activity sector and unity. The standards are applied to variable expenses and expenses budgets to period expenses.

The stages through stages for unrolling calculation works are:

1. Determination of product and enterprise marketing and sales:

$$d_i = P_{v_i} \times Q_i \text{ sau } D_T = \sum d_i,$$

where:

d_i = marketing and sales afferent to „i” product;

Q_i = quantity afferent to „i” product;

P_{v_i} = unitary marketing and sales price afferent to „i” product;

D_T = total marketing and sales (unity level).

2. Determination of production variable expenses:

$$CHV_P = CHV_{PS} + \Delta_{PS},$$

where:

CHV_{PS} = standard production variable expenses;

Δ_{PS} = deviations from the standard production variable expenses.

3. Determination of raw profit production contribution:

$$CBP_i = d_i - CHV_{p_i}$$

$$\text{or } CBP \text{ from production} = D_T - CHV_{PT},$$

where:

CBP_i = raw profit contribution afferent of „i” product;

d_i = marketing and sales afferent of „i” product;

CHV_{p_i} = production variable expenses afferent to „i” product;

DT = total marketing and sales (unity level);

CHV_{-PT} = total production variable expenses.

4. Determination of marketing and sales variable expenses:

$$CHV_D = CHV_{DS} + \Delta_{DS},$$

where:

CHV_{DS} = standard marketing and sales variable expenses;

Δ_{DS} = deviations from standard marketing and sales variable expenses.

5. Determination of raw profit

marketing and sales contribution (level one):

$$CBP(I)_i = CBP_i \text{ from production} - CHV_{Di}$$

$$\text{or } CBP \text{ (level I)} = CBP \text{ from production} - CHV_{DT},$$

where:

CHV_{Di} = marketing and sales variable expenses afferent of “i” product.

6. Determination of raw profit contribution (level two):

$CBP \text{ (level II)} = CBP \text{ (level I)} - \text{Product period expenses.}$

7. Determination of raw profit contribution (level three):

$CBP \text{ (level III)} = CBP \text{ (level II)} - \text{Place period expenses.}$

8. Determination of raw profit contribution (level four):

$CBP \text{ (level IV)} = CBP \text{ (level III)} - \text{Departments period expenses.}$

9. Determination of raw profit contribution (level five):

$CBP \text{ (level V)} = CBP \text{ (level IV)} - \text{Activity sectors period expenses.}$

10. Determination of the final result:
Final result = $CBP \text{ (level V)} - \text{Management period expenses.}$

Stage	Debit		Credit
1. Registration of production variable expenses:	921.01 "Variable production expenses"	=	901 „Internal offset for expenses and revenues"
2. Registration of marketing and sales variable expenses:	921.02 „Variable sales expenses"	=	901 „Internal offset for expenses and revenues"
3. Registration of period expenses:	924.01 „Period product expenses" 924.02 „Period place expenses" 924.03 „Period departments' expenses" 924.04 „Period marketing and sales expenses" 924.05 „Period management expenses"	=	901 „ Internal offset for expenses and revenues"
4. Registration of semi variable expenses:	923 „Semi variable expenses"	=	901 „ Internal offset for expenses and revenues"
5. Registration of separation of semi variable expenses in: variable and period.	921.01 "Variable production expenses" 924.02 „Period place expenses"	=	901 „ Internal offset for expenses and revenues"
6. Registration of revenues afferent to sale production:	901 „ Internal offset for expenses and revenues"	=	931 „Revenues from the obtained production"

Stage	Debit		Credit
7. Calculation and registration of standard production variable expenses afferent to whole fabricated production:	9445 „Finite products”	=	902 „Internal offset for obtained production”
8. Offset effective production variable expenses:	902 „Internal offset for obtained production”	=	921.01 “Variable production expenses”
9. Registration of standard production variable expenses afferent to sold out quantity:	931 „Revenues of obtained production”	=	9445 „Finite products”
10. Registration of deviations from standard production variable expenses:	931 „Revenues of obtained production”	=	9448 „Product cost differences”
11. Registration of standard marketing and sales variable expenses afferent to whole fabricated quantity:	9445 „Finite products”	=	902 „Internal offset for obtained production”
12. Offset effective marketing and sales variable expenses:	902 „Internal offset for obtained production”	=	921.02 „Variable sales expenses”
13. Registration of standard marketing and sales variable expenses afferent to sold out quantity:	931 „Revenues of obtained production”	=	9445 „Finite products”
14. Registration of deviations from standard marketing and sales variable expenses:	931 „Revenues of obtained production”	=	9448 „Product cost differences”
15. Registration of cost differences afferent to products, at the end of the month:	9448 „Product cost differences”	=	902 „Internal offset for obtained production”
16. Registration of price differences afferent to sold out quantities based on it allocation coefficient:	931 „Revenues of obtained production”	=	9448 „Product cost differences”
17. Registration of raw profit marketing and sales contribution:	931 „Revenues of obtained production”	=	903 „Internal offset regarding raw contribution”
18. Registration offset product period expenses:	903 „Internal offset regarding raw contribution”	=	924.01 „Period product expenses”
19. Registration offset period expenses afferent to expenses places:	903 „Internal offset regarding raw contribution”	=	924.02 „Period place expenses”
20. Registration offset departments period expenses:	903 „Internal offset regarding raw contribution”	=	924.03 „Period departments’ expenses”
21. Registration offset marketing and sales period expenses:	903 „Internal offset regarding raw contribution”	=	924.04 „Period marketing and sales expenses”
22. Registration offset period management expenses:	903 „Internal offset regarding raw contribution”	=	924.05 „Period management expenses”
23. Registration of obtaining result:	901 „Internal offset for expenses and revenues”	=	903 „Internal offset regarding raw contribution”

C. Variable costs method. Period expenses covering calculation

Termed as “total calculation” it consists in determination of the final result and product rentability in a form much more detailed through allocation of period expenses on every level, including product unity general management expenses, in function of the raw profit contribution, starting from the evolved variant of the mentioned method.

The raw profit contribution determined at different organizatoric levels represents a very important supplementary information source in making decisions by the enterprise

management because it shows in which measure the period expenses that are coming back to each product integral covered or not, creating this way profit, respective loss.

The stages that are passing through registration in the managerial accounting are:

1. Determination of product and enterprise marketing and sales:

$$D_i = P_{v_u} \times Q_i,$$

where:

D_i = marketing and sales afferent to „i” product;

Q_i = quantity afferent to „i” product;

P_{v_u} = unitary marketing and sales price afferent to „i” product.

2. Determination of production variable expenses:

$$CHV_P = CHV_{PS} + \Delta_{PS},$$

where:

CHV_{PS} = standard production variable expenses;

Δ_{PS} = deviations from the standard production variable expenses.

3. Determination of raw profit production contribution:

$$CBP_{PROD} = D_1 - CHV_{P_i},$$

where:

CHV_{P_i} = production variable expenses afferent to „i” product.

4. Determination the percentage of marketing and sales (% D_1):

$$\%D_1 = \frac{CBP_{PROD}}{Desfacere} \times 100,$$

where:

CBP_{PROD} = raw profit production contribution.

5. Determination of marketing and sales variable expenses:

$$CHV_D = CHV_{DS} + \Delta_{DS},$$

where:

CHV_{DS} = standard marketing and sales variable expenses;

Δ_{DS} = deviations from standard marketing and sales variable expenses.

6. Determination of raw profit marketing and sales contribution:

$$CBP_{DESF(i)} = CBP_{PROD(i)} - CHV_{D_i},$$

where:

CHV_{D_i} = marketing and sales variable expenses afferent of “i” product.

7. Determination of percentage of marketing and sales(% D_2):

$$\%D_2 = \frac{CBP_{DESF(i)}}{Desfacere} \times 100,$$

where:

$CBP_{DESF(i)}$ = raw profit marketing and sales contribution (level I).

8. Determination of allocation percentage of the product period expenses:

$$\%CHfixe_n = \frac{CHfixe_n}{CBP_{n-1}} \times 100,$$

where:

$CHfixe_n$ = period expenses afferent to „n” level;

CBP_{n-1} = raw profit contribution of the „n-1” level.

9. Determination of raw profit contribution (*level two*):

$CBP (level II) = CBP (level I) - CHfixe_i$, where: $CHfixe_i$ = period expenses of the “i” product.

10. Determination of allocation percentage of the period place expenses:

$$\%CHfixe_n = \frac{CHfixe_n}{CBP_{n-1}} \times 100,$$

where:

$CHfixe_n$ = period expenses afferent to „n” level;

CBP_{n-1} = raw profit contribution of the „n-1” level.

11. Determination of raw profit contribution (*level three*):

$CBP (level III) = CBP (level II) - Place$ period expenses.

12. Determination of allocation percentage of the period departments expenses:

$$\%CHfixe_n = \frac{CHfixe_n}{CBP_{n-1}} \times 100,$$

where:

$CHfixe_n$ = period expenses afferent to „n” level;

CBP_{n-1} = raw profit contribution of the „n-1” level.

13. Determination of raw profit contribution (*level four*):

CBP (*level IV*) = CBP (*level III*) – Departments period expenses.

14. Determination of allocation percentage of period marketing and sales expenses:

$$\%CH_{\text{fixe}_n} = \frac{CH_{\text{fixe}_n}}{CBP_{n-1}} \times 100,$$

where:

CH_{fixe_n} = period expenses afferent to „n” level;

CBP_{n-1} = raw profit contribution of the „n-1” level.

15. Determination of raw profit contribution (*level five*):

CBP (*level V*) = CBP (*level IV*) – Period marketing and sales expenses.

16. Determination of allocation percentage of period management expenses:

$$\%CH_{\text{fixe}_n} = \frac{CH_{\text{fixe}_n}}{CBP_{n-1}} \times 100,$$

where:

CH_{fixe_n} = period expenses afferent to „n” level;

CBP_{n-1} = raw profit contribution of the „n-1” level.

17. Determination of the final result:

Final result = CBP (*level V*) – General management period expenses.

4. Advantages and disadvantages of the variable costs method

The advantages of the variable costs method are the following:

▪ Simplicity in calculus effectuation and determination of the unit product costs.

Also, is efficient because is providing rapid information to the enterprise management about final result;

▪ Allows determination and calculation of the specific indicators that helps to analyze cost-volume-profit or price-cost-volume relations, being efficient for making decisions on short-term in the production and marketing and sales policy;

▪ Allows realization of an efficient control at every enterprise levels and stringent planning of the expenses, responsible performances judgment in function of releasing margin on sectors;

▪ Abandoning products which variable costs margins are negative and re-orientation to the positive ones and rentability appreciation of different products starting from the variable costs margins.

The limits of the variable costs method are the following:

▪ The reasoning offered by the variable costs method is valid only on short-term; diminution or suppression of the period expenses intervening only on long-term;

▪ Is not considering the fact that certain products, which in appearance are profitable, can be large support functions consumers and, in fact, is reflecting in period extremely high expenses.

Notes

- ⁽¹⁾ Base components can be: materials consume, productive wages and productive wages accessories, other direct expenses, transport expenses, packaging expenses etc.
- ⁽²⁾ This thing will be realized with extreme point proceeding based on managerial accounting providing data.
- ⁽³⁾ See S. Căpușneanu, „Adaptation of the general accounting plan to the Direct-Costing method in Romania through period expenses covering calculation variant (I)”, *Theoretical and Applied Economics – The Economist*, nr. 424/2004, p. 5.

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