Analysis Of A Company’s Capacity To Produce Profit Under Inflation Conditions

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Abstract:
The priority given to prices stability should be a fundamental objective of the monetary policy towards promoting a sustainable economic growth, to the extent in which it does not damage the fulfilment of its fundamental objective. The classic patterns of analyzing dynamic rates of return (between accounting periods) met in the specialized literature are built by leaving aside the inflation, and results cannot be compared. The information of the profit and loss account is reported at the date when sales and expenses are made. For a better understanding, We will present IAS 29 “Current cost financial statements”, par. 30 “Global income statement” according to which: the statement of the global income to the current cost, before retreatment, generally reports current costs at the date the transactions or events generating them occur. The cost of sales and depreciation are recorded at current cost at the time of consumption; sales and expenses are recorded at current costs at the time of consumption; sales and expenses are recorded at money value at that time. This is why all values should be retreated in the unit of measurement existing at the end of the reporting period, using a general price index.[11]

We will present next the methods to analyze sales related profit and the rates of return under conditions of inflation, using present values as compared to rated values.

Key-Words: inflation, current cost, incomes, profit, commercial profitability, economic profitability, financial profitability

1 Introduction
Inflation is a major unbalance in the economy of any country, represented by a generalized price increase and by simultaneous decrease of the purchase power of the national currency. Inflation is a final indicator, which indicates at the end of the fiscal year whether monetary, fiscal, legislative governmental policies along with Central Bank policies are coordinated and result in consumption prices stability. [7]

The inflationist process is characterized by two major trends, namely: generalized prices increase and money purchase power decrease. On a long term, inflation is present in any economy. The phenomenon cannot be completely controlled, and at the same time it is not disadvantageous for everybody. Those who accurately anticipate the evolution of inflation can always find methods to get rich, to the disadvantage of those who cannot anticipate it.

Under conditions of inflation there is no real profit at the end of an accounting period unless the company has built its equity capital again in constant currency.

From the economists’ point of view, inflation has much more important effects, even some of them consider them mainly negative, and others mainly positive, especially in the case of a low inflation rate. Among the most important consequences of inflation in economy we can count:

- drops in sales and therefore of the company’s profit, respectively the distortion of outcomes indicators;
- incomes and wealth redistribution through which some economic actors lose, being even in the
position to reach bankruptcy, while other gain due to the uneven prices and incomes rises;
  - it determines the rising pressure on the available active capital;
  - undervaluation of equity capitals, frozen assets, amortization etc;
  - capital decrease as a result of profit tax; unreal dividend distribution etc;
  - it determines a runaway of active capital and a trend to place available cash in non-productive durable commodities. This process may result in a slowdown or even a stagnation of the economic growth.

Inflation is one of the most important factors that financial managers should take into consideration. Profitability (profit and profitability rates), under inflation conditions, calculated based on the nominal values of the Loss and Profit Account and of the balance sheet is not relevant.

We will present next the methods proposed in order to analyze profit and profitability rates if information is presented in constant monetary units, in comparison to the case in which it is presented in nominal values.

1. Analysis of turnover related profit

Of the well-known forms to express profit, we think that sales related profit is relevant for this study. This is determined by following the relation [6]:

\[ P_v = \sum q_v \cdot p - \sum q_v \cdot c \]  

(1)

For exemplification, we will use the following data:

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\( \text{Note: The general price index at 31}^{\text{st}} \text{ of December 2009 compared to 31}^{\text{st}} \text{ of December 2008 was of 130.3\%.} \)

The data necessary for establishing the comparable values of 2009 are described in the following table:

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The factor analysis of sales related profit based on nominal values results in the following situation:

\[ \Delta P_v = P_{v,2008} - P_{v,2009} = 5,750 - 4,500 = 1,250 \text{ lei} \]  

(2)

1. Influence of sold production volume:

\[ \Delta_{p,v} = P_{v,2008} \cdot I_{v,2008} - P_{v,2009} \cdot I_{v,2009} \]  

where:

\[ I_{v,2008} = \left( \frac{q_{v,2008}}{P_{v,2008}} \right) \]  

(4)

2. Influence of sold production structure:

\[ \Delta_{g,v} = \left( \sum q_{v,2008} \cdot P_{v,2008} - \sum q_{v,2009} \cdot P_{v,2009} \right) - P_{v,2008} \cdot I_{v,2008} \]  

(5)

3. Influence of unit costs:

\[ \Delta_{c,v} = \left( \sum q_{v,2008} \cdot c_{v,2008} - \sum q_{v,2009} \cdot c_{v,2009} \right) \]  

(6)

4. Influence of the selling price:

\[ \Delta_{p,v} = \left( \sum q_{v,2008} \cdot P_{v,2008} - \sum q_{v,2009} \cdot P_{v,2009} \right) \]  

(7)

For verification purposes, I shall use the relation:

\[ \Delta P_v = \Delta_{p,v} + \Delta_{g,v} + \Delta_{c,v} + \Delta_{p,v} \]  

(8)

1.250 = 45 + (330) + (5,590) + 7,125

The profit factor analysis based on the values expressed in comparable monetary units is as follows:

\[ \Delta P_v = P_{v,2008} - P_{v,2009} = 6,390 - 5,863 = +527 \text{ lei} \]  

(9)

1. Influence of sold production volume:

\[ \Delta_{p,v} = P_{v,2008} \cdot I_{v,2008} - P_{v,2009} \cdot I_{v,2009} \]  

where:

\[ I_{v,2008} = \left( \frac{q_{v,2008}}{P_{v,2008}} \right) \]  

(10)

1. Influence of sold production structure:

\[ \Delta_{g,v} = \left( \sum q_{v,2008} \cdot P_{v,2008} - \sum q_{v,2009} \cdot P_{v,2009} \right) - P_{v,2008} \cdot I_{v,2008} \]  

(11)

2. Influence of sold production structure:

\[ \Delta_{g,v} = \left( \sum q_{v,2008} \cdot c_{v,2008} - \sum q_{v,2009} \cdot c_{v,2009} \right) \]  

(12)

3. Influence of unit costs:

\[ \Delta_{c,v} = \left( \sum q_{v,2008} \cdot c_{v,2008} - \sum q_{v,2009} \cdot c_{v,2009} \right) \]  

(13)
4. Influence of the selling price:
\[ \Delta p = \left( \sum q_{\text{2008}} \cdot c_{\text{2008}} - \sum q_{\text{2008}} \cdot P_{\text{2008}} \right) = \]
\[ = 49.938 - 49.351 = -587 \text{ lei} \]

For verification purposes, we shall use the relation:
\[ \Delta P_v = \Delta p + \Delta q + \Delta p' + \Delta q' \]
(15)

527 = 58,63 + (-428,63) + 310 + 587

After having analyzed factors influences in the two variants, we notice the following:
- the influences of the sold production volume and structure are expressed in the reporting monetary unit of the accounting period taken as comparison basis
- unit costs influences is totally distorted both from the point of view of meaning and size. In the example described above, based on the nominal values, we notice a rise of costs and a decrease of profit, and based on the expression in comparable monetary units, we notice a decrease of costs and an increase of profit;
- the influence of selling prices is distorted from the point of view of size, the meaning being preserved in the two variants.

1. Analysis of the commercial profit rate

For the factor analysis we will use the following pattern:
\[ \overline{\Delta c} = \left( 1 - \sum q_{\text{2008}} \cdot c_{\text{2008}} \right) \cdot 100 \]
(16)

\[ \overline{\Delta c}_{\text{2008}} = \left( 1 - \sum q_{\text{2008}} \cdot c_{\text{2008}} \right) \cdot 100 = \left( 1 - \frac{26.400}{30.000} \right) \cdot 100 = +12\% \]
(17)

\[ \overline{\Delta c}_{\text{2009}} = \left( 1 - \sum q_{\text{2009}} \cdot c_{\text{2009}} \right) \cdot 100 = \left( 1 - \frac{31.400}{36.000} \right) \cdot 100 = +12,78\% \]
(18)

The factor analysis based on nominal values leads to the following results:
\[ \Delta \overline{\Delta c} = \overline{\Delta c}_{\text{2009}} - \overline{\Delta c}_{\text{2008}} = \]
\[ \left[ 1 - \sum q_{\text{2008}} \cdot c_{\text{2008}} \right] - \left[ 1 - \sum q_{\text{2009}} \cdot c_{\text{2009}} \right] \cdot 100 = \]
\[ = 12,78 - 12 = +0,78\% \]

1. Influence of the sold production structure:
\[ \Delta p = \left( 1 - \sum q_{\text{2008}} \cdot P_{\text{2008}} \right) \cdot 100 - \overline{\Delta c}_{\text{2008}} = \]
\[ = \left[ 1 - \sum q_{\text{2008}} \cdot c_{\text{2008}} \right] - \left[ 1 - \sum q_{\text{2008}} \cdot P_{\text{2008}} \right] \cdot 100 = \]
\[ = 12,78 - 12 = +0,78\% \]

2. Influence of the selling price:
\[ \Delta p = \left( 1 - \sum q_{\text{2008}} \cdot P_{\text{2008}} \right) \cdot 100 - \overline{\Delta c}_{\text{2008}} = \]
\[ = \left[ 1 - \sum q_{\text{2008}} \cdot c_{\text{2008}} \right] - \left[ 1 - \sum q_{\text{2008}} \cdot P_{\text{2008}} \right] \cdot 100 = \]
\[ = 12,78 - 12 = +0,78\% \]

2. Influence of the selling price:
\[ \Delta p = \left( 1 - \sum q_{\text{2008}} \cdot P_{\text{2008}} \right) \cdot 100 = \]
\[ = \frac{25}{11,13} - 14,07\% \]

3. Influence of the unit cost:
\[ \Delta p = \left( 1 - \sum q_{\text{2008}} \cdot P_{\text{2008}} \right) \cdot 100 = \]
\[ = \frac{1}{12,78} - 12,42\% \]

The factor analysis based on the values of comparable monetary units leads to the following results:
\[ \overline{\Delta c}_{\text{2008}} = \left[ 1 - \sum q_{\text{2008}} \cdot c_{\text{2008}} \right] \cdot 100 = \left[ 1 - \sum q_{\text{2008}} \cdot P_{\text{2008}} \right] \cdot 100 = \]
\[ = 12,78 - 12 = +0,78\% \]

1. Influence of the sold production structure:
\[ \Delta p = \left( 1 - \sum q_{\text{2008}} \cdot P_{\text{2008}} \right) \cdot 100 = \]
\[ = \frac{43.858}{49.351} - 12\% \]

2. Influence of the selling price:
\[ \Delta p = \left( 1 - \sum q_{\text{2008}} \cdot P_{\text{2008}} \right) \cdot 100 = \]
\[ = \frac{43.548}{49.351} - 12,78\% \]

3. Influence of the unit cost:
\[ \Delta p = \left( 1 - \sum q_{\text{2008}} \cdot P_{\text{2008}} \right) \cdot 100 = \]
\[ = \frac{43.548}{49.351} - 12,78\% \]

3. Analysis of resources rate of return

For the purpose of its factor analysis, I will use the following pattern:
\[ \overline{\Delta c} = \left( \frac{q_{\text{2008}} \cdot P_{\text{2008}}}{q_{\text{2008}} \cdot c_{\text{2008}}} \right) \cdot 100 \]
(29)
Based on the nominal values we will get the following results:

1. Influence of the sold production structure:

\[
\Delta_n = \left( \frac{\sum q_{2008} \cdot p_{2008} - \sum q_{2008} \cdot c_{2008}}{\sum q_{2008} \cdot c_{2008}} \right) \times 100 = \frac{37,500 - 33,000}{33,000} \times 100 = +13,64\%
\]

2. Influence of the unit cost:

\[
\Delta_n = \left( \frac{\sum q_{2008} \cdot p_{2008} - \sum q_{2008} \cdot c_{2008}}{\sum q_{2008} \cdot c_{2008}} \right) \times 100 = \frac{45,000 - 39,250}{39,250} \times 100 = +14,65\%\]

\[
\Delta_n = \left( \frac{\sum q_{2008} \cdot p_{2008} - \sum q_{2008} \cdot c_{2008}}{\sum q_{2008} \cdot c_{2008}} \right) \times 100 = \frac{49,938 - 43,548}{43,548} \times 100 = +14,65 - 13,33 = +1,32\%
\]

3. Influence of the selling price:

\[
\Delta_n = \left( \frac{\sum q_{2008} \cdot p_{2008} - \sum q_{2008} \cdot c_{2008}}{\sum q_{2008} \cdot c_{2008}} \right) \times 100 = \frac{49,351 - 43,858}{43,858} \times 100 = +10,81\%
\]

The factor analysis based on the values of constant monetary units leads to the following results:

1. Influence of the sold production structure:

\[
\Delta_n = \left( \frac{\sum q_{2008} \cdot p_{2008} - \sum q_{2008} \cdot c_{2008}}{\sum q_{2008} \cdot c_{2008}} \right) \times 100 = \frac{49,351 - 43,858}{43,858} \times 100 = +10,81\%
\]

2. Influence of the unit cost:

\[
\Delta_n = \left( \frac{\sum q_{2008} \cdot p_{2008} - \sum q_{2008} \cdot c_{2008}}{\sum q_{2008} \cdot c_{2008}} \right) \times 100 = \frac{49,351 - 43,858}{43,858} \times 100 = +10,81\%
\]

4. Analysis of the economic rate of return

In order to analyze the economic rate of return, I propose the following pattern:

\[
\bar{R}_e = \frac{Pr}{At} \times 100
\]

\[
At = Ai + Ac
\]

where:

- \(Pr\) – total assets used in the operation cycle;
- \(Ai\) – annual average value of frozen assets;
- \(Ac\) – average balance of circulating assets.

The two terms of the rate in the case of using nominal values are not comparable. Frozen assets are valued into book values (historical costs), completely different from the monetary units in which circulating assets and turnover related profit are evaluated. [10]

If we use the multiplicative pattern:

\[
\bar{R}_e = \left( \frac{CA}{At} \right) \left( \frac{Pr}{CA} \right) \times 100
\]

We notice that the asset rate of turnover \(\frac{CA}{At}\) is distorted by the undervaluation of total assets and the commercial rate of return \(\frac{Pr}{CA}\) undergoes the distortions indicated in points 1 and 2.

5. Analysis of the financial rate of return

The financial rate of return established based on the nominal values of net profit and equity capital does not accurately reflect the reality because the two terms are evaluated differently. In the case of assets evaluation at the historical cost, the equity capital is undervalued, and in conditions of inflation, the net profit is distorted because one does not take into consideration the adjustments for maintaining the equity capital (reconstruction of the purchasing power of the equity capital) and other incomes or losses of the monetary position. [4]

In order to exemplify this statement, we will use the following data:
If we consider inflation, then calculations are the following:

\[
\bar{R}_f = \frac{P_n}{K_p} = \frac{31.250}{125.000} = 0.25 = 25\% \tag{42}
\]

If we consider inflation, then calculations are the following:

\[
\bar{R}_f = \frac{P_n}{K_p} = \frac{6.250}{125.000 + 25.000} = \frac{6.250}{150.000} = 0.0417 = 4.17\% \tag{43}
\]

The 25% rate of return of the equity capital is established as if the inflation rate is zero. In conditions of inflation, the numerator decreases and the denominator increases with the same value (adjustment in order to maintain the financial capital).

4 Conclusions

For the commercial rate of return and the rate of return of consummated resources, if we compare the influences established based on nominal values and comparable monetary unit values, we get the following:

- the influence of sold production structure is the same because all the terms from the calculation formulas are expressed in the values of the same accounting period;
- the influences of costs and selling prices are distorted, the explanations being the same as in the case of sales related profit.

The earning or loss from the net monetary position can be achieved as a difference resulted from retreating non-monetary assets, equity capitals and elements of the global return statement and from the adjustment of indexed assets and debts. The earning or loss can be estimated by applying the variation of a general price index to the weighted average of the difference between the monetary assets and debts of that period. [11]

References: