

CONDITIONS FOR SUSTAINABLE GROWTH (SGR) FOR COMPANIES FROM METALLURGY AND MINING SECTOR IN POLAND

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The purpose of the article was to show that the growth of the company cannot constitute a goal in itself. It must be confronted with the actual capabilities of the growth of the company and the conditions for obtaining any funds that could finance this growth. The paper presents fundamental relations that management must take into account so as to develop in sustainable way. In each case, an overview of the various options must be taken in order to choose the optimal solution in the existing conditions. The analysis was conducted on the example of two companies from the mining and metallurgical sector listed on the Stock Exchange in Warsaw.

Key words: metallurgy, mining, sustainable growth (SGR), companies, Poland

INTRODUCTION

The development of the business means that between sales growth and an increase in assets and equity should exist the relevant relationships. Many managers set as an objective to raise company's sales. But, as business increases, so does the need for additional assets to support the growth of business. It means that if growth exceeds the financial resources necessary to fund the increase in assets, the company must seek additional financing either through retained earnings (internal financing) or through issuing new shares or borrowing (external financing). The faster growth of the company the greater the need for investment, thus the greater the need to raise additional capital.

The sustainable growth rate is a useful tool that allows managers to determine how quickly a company can grow, whether retained earnings are sufficient to finance the company's growth, or what will be the external financial needs for future growth of the company.

SUSTAINABLE GROWTH RATE

Over the years, a profit was considered the most important goal of the company. The next determinant of the success of the company usually was considered the growth. In recent years, however, there are increasing signs that some managements must eventually face the fact that unrestrained growth may be inconsistent with established financial policies [1].

The first step to analyse the growth potential of the company is to calculate the internal growth rate.

Internal growth rate (IGR) is the maximum growth rate that a company can achieve without external funds [2]. It is calculated according to the formula:

$$IGR = \frac{RE}{A}$$

or after transforming this equation to get the product of three ratios that affect the value of the IGR we obtain:

$$IGR = \frac{RE}{NI} \times \frac{NI}{E} \times \frac{E}{A} = b \times ROE \times \frac{E}{A}$$

hence:

$$IGR = b \times ROA$$

where:

RE – retained earnings,

A – total assets,

NI – net income,

E – equity of shareholders,

b – retention rate of earnings

ROE, ROA – return on equity and total assets at the beginning of the year.

In addition to focusing on how rapidly the company can grow without any external financing, one should be interested in the growth rate that can be sustained without any additional equity issues. Usually managers determine the optimal capital structure for their company, which is maintained as the equity is increased by retained earnings. Thus the firm issues only enough debt to keep the debt-equity ratio constant.

Sustainable growth rate (SGR) is the maximum rate of growth in sales a company can achieve without issuing new shares or changing either its operating policy (its operating profit margin and capital turnover remain the same) or its financing policy (its debt-to-equity ratio and dividend payout ratio remain the same) [3].

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The basic formula is:

$$SGR = b \times ROE = (1 - d) \times ROE$$

where:

d – dividend payout ratio.

This equation was obtained starting from the relation that: Value of the issue of shares necessary is equal Growth rate times Assets less Retained earnings and less New debt [4].

Because we assume that *value of new shares* is equal zero, we get:

$$SGR = \frac{RE + New\ Debt}{Debt + Equity}$$

Since the debt and equity increase at the same rate, the value of new debt must be equal to the product of retained earnings and *D/E* ratio. Thus, the equation for the *SGR* we can write as follows:

$$SGR = \frac{RE \times \left(1 + \frac{D}{E}\right)}{D + E} = \frac{RE}{E} = \frac{RE}{NI} \times \frac{NI}{E} = b \times ROE$$

So the sustainable development of the company is depends on two factors: the retention rate (or dividend payout ratio) and financial performance of the equity, i.e. *ROE*. The greater return of the equity the greater the rate of growth and vice versa. The higher the dividend payout ratio, the lower the rate of growth of the company.

In the literature we find many ways to present a formula for the *SGR* to show the influence of various factors on this indicator.

For example, in [5] we find the value of the *SGR* as dependent on four factors:

$$SGR = b \times PM \times AT \times FLM$$

where:

PM – profit margin after taxes,

AT – assets turnover,

FLM – financial leverage multiplier.

In a slightly different way the formula for the *SGR* can be presented, keeping in mind, that the *ROE* can be expressed by product of operating profit margin (*OPM*), capital turnover (*CT*), financial cost ratio (*FC*), financial structure ratio (*FS*) and the tax effect ratio (*TE*) [6]. In this case the sustainable growth rate can be written as follows:

$$SGR = b \times OPM \times CT \times FC \times FS \times TE$$

This equation identifies factors that influence the company’s capacity to grow without issuing new shares. The *b*, *FC* and *FS* reflect financial policy, the *OPM* and *CT* reflect operating policy, and the *TE* show the effective rate at which its pre-tax profit is taxed. If mentioned factors remain unchanged, a company cannot grow faster than its sustainable growth rate unless it issues new shares.

Firms with sales growing faster than their *SGR* will eventually experience cash deficit; firms with sales growing slower than their *SGR* will eventually generate

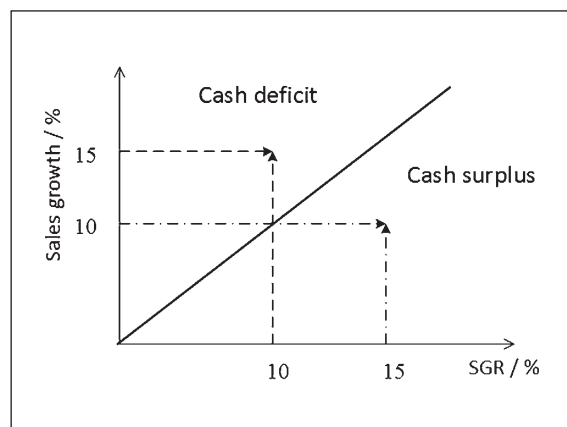


Figure 1 Sales growth versus cash balance

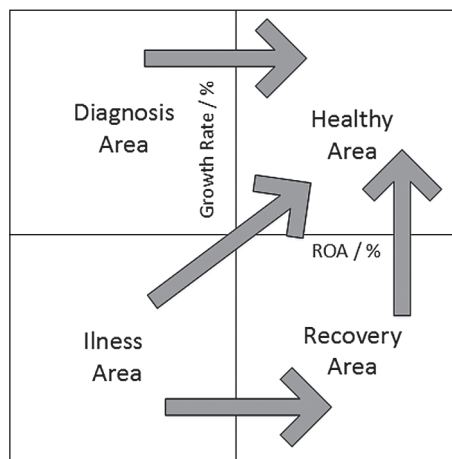


Figure 2 Diagnosis matrix [based on 8]

cash surplus (Figure 1), which means that firm is not effectively utilizing its resources to generate shareholder value [7].

Depending on the current relationship of the *ROA* and the growth rate the situation of the company can be described. Possible variants can be presented in the form of a matrix [8], which is shown in Figure 2.

The vertical axis measures the growth of a company, the horizontal axis measures the return on assets (*ROA*). The matrix illustrate the correlation between sales growth and *ROA* with the best situation in upper right quadrant. The arrows show the direction that a company should seek to improve its situation.

GROWTH ANALYSIS OF THE COMPANIES INVESTIGATED

The analysis of the sustainable growth rate and changes in sales was carried out on the example of two companies from the mining and metallurgical sector that are listed on the Warsaw Stock Exchange. These are Jastrzębska Spółka Węglowa S.A. (JSW) and KGHM Polska Miedź S.A. (KGHM).

For both companies, on the basis of data presented in Tables 1 and 2, the necessary ratios have been calculated - Tables 3 and 4.

Table 1 Some financial values of JSW / mln EUR

	2010	2011	2012	2013	2014
Equity	1541	1 912	2 097	2 014	1 705
Assets	2679	3 083	3 441	3 342	3 606
Sales	1820	2 256	2 114	1 812	1 627
EBIT	486	654	313	48	-185
EBT	466	646	306	26	-211
NI	375	504	237	20	-157

Table 2 Some financial values of KGHM / mln EUR

	2010	2011	2012	2013	2014
Equity	3 768	5 296	5 360	5 561	5 990
Assets	5 363	6 939	8 307	8 310	9 472
Sales	4 187	5 340	6 399	5 725	4 892
EBIT	1 375	3 196	1 551	1 038	877
EBT	1 434	3 229	1 516	1 006	740
NI	1 181	2 673	1 139	720	585

Table 3 Ratios for JSW / %

	2011	2012	2013	2014
$\Delta S/S$	24,4	-6,7	-14,2	-10,2
ROA*	18,8	7,7	0,6	-4,7
ROE*	32,7	12,4	0,9	-7,8
b / -	0,9	0,4	-2,6	1,0
SGR	21,3	8,8	-2,4 %	-7,8
IGR	16,5	2,8	-1,5 %	-4,7

* at the beginning of the year

Table 4 Ratios for KGHM / %

	2011	2012	2013	2014
$\Delta S/S$	19,5	30,5	-11,0	-14,6
ROA*	45,9	16,8	8,8	7,0
ROE*	65,4	22,0	13,6	10,5
b / -	0,5	0,6	0,7	0,6
SGR	31,3	12,9	9,2	6,2
IGR	22,0	9,9	5,9	4,2

* at the beginning of the year

In the literature, many authors writing about sustainable growth assume that the company in the coming years will be reached growth of sales. However, examined companies have to face the opposite problem. In subsequent years both companies record decline in sales (in JSW from 2012 onwards, in KGHM since 2013). In both cases, the main cause lies in the gradual decline in prices of both coal and copper. Looking at the diagnosis matrix we can see that in the case of JSW, from a favorable position “Healthy Area” in 2011 it passed into quadrant “Warning Area” in 2012 and 2013, then into “Illness Area” in 2014 (Figure 3). In the case of KGHM the situation is a little better. In 2011 and 2012 it took the position in “Healthy Area”, then in 2013 and 2014 moved to the quadrant “Warning Area” (Figure 4).

Analyzing the situation of mining companies in terms of IGR and SGR (Fig. 5), we see that in 2011

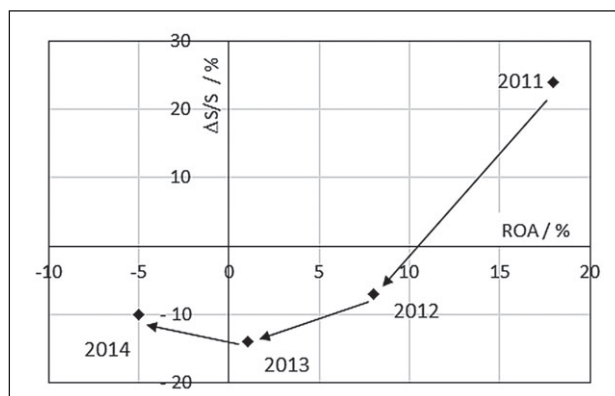


Figure 3 The relationship between ROA and sales growth for JSW S.A.

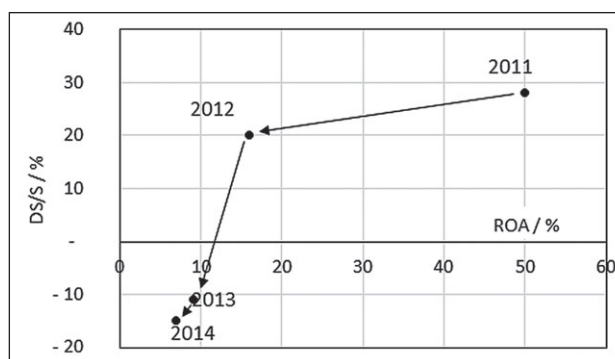


Figure 4 The relationship between ROA and sales growth for KGHM

while sales growth was smaller than the SGR, but larger than the IGR, despite this, the company increased its debt (an increase of external financing), thus causing an increase in financial leverage (in 2014 ratio of $D/E=1,12$).

Moreover, in 2013, JSW paid a dividend of more than three times greater than the net income, the same retention rate b was negative. And although in 2014 no dividend was paid, it's a huge net loss resulted in a decrease in equity, with a simultaneous increase of debt. Hence, both SGR as IGRs have negative values. It is difficult to predict what will happen in 2015. And so a bad situation worse strikes at the beginning of this year lasting 17 days.

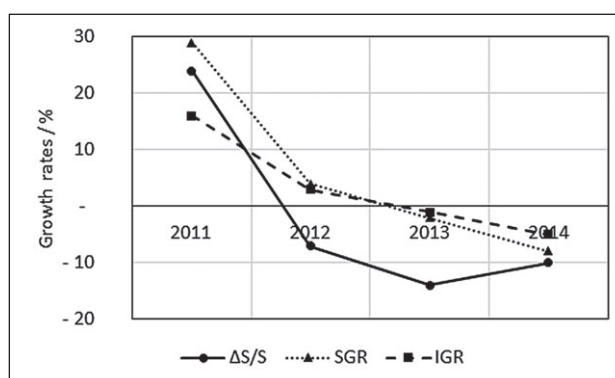


Figure 5 Changes in sales against values of SGR and IGR for JSW S.A.

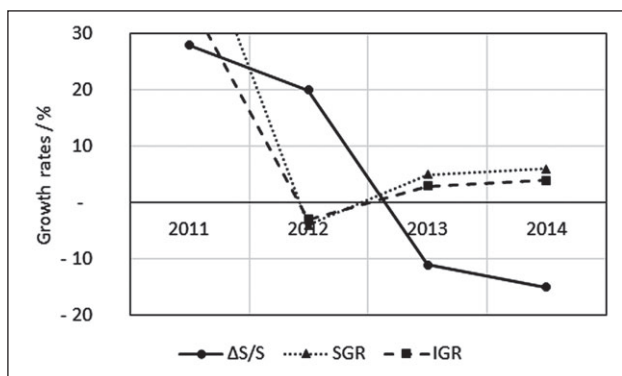


Figure 6 Changes in sales against values of SGR and IGR for KGHM

Although the situation of KGHM is not the best, but it is not as dramatic as JSW. It seems that there was also made a mistake by paying in 2012 dividend exceeding net income in a situation of decreasing sales. This resulted in that b was negative, and hence SGR and IGR also negative (Figure 6). In the years 2013-2014, although sales continued to fall, however, the company has potential to achieve sales growth. In 2015 it is planned to achieve full production capacities of the Sierra Gorda mine (Chile) and production of molybdenum. With an unchanged leverage KGHM should get an increase in sales of just over 6 %.

SUMMARY

Sustainable growth rate is the maximum pace at which a company can grow without altering its financial leverage and without issuing new shares. This metric assumes that (1) the company will grow sales as rapidly as market conditions permit, (2) management is unwilling to issue new shares, and (3) the company maintain its capital structure and dividend policy.

To avoid problems with too rapid growth and expose yourself to a lack of funds or problems with slow growth and ineffective use of excessive cash, companies should carry out their long-term plans in line with sustainable

development. This requires to determine the initial assumptions about the operational, financial and dividend policy. It is advisable to perform a number of scenarios, and only on their basis to make the final decision.

In the case of the surveyed companies we face the opposite problem - in the studied years a drop in sales takes place, also the SGR decreases (in case of the mining company to below zero). If market conditions will deteriorate, in mining company it should be implemented rescue plans. If commodity prices start to rise, according to the precepts of sustainable growth, the metallurgical company have to in a careful and balanced way plan their growth. It seems that given its involvement in various international markets, it is much more likely to reverse the negative trend.

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Note: The responsible translator for English language is Official Translator certified by the Ministry of Justice Agata Matuga, Katowice Poland