

THE RELATIONSHIP BETWEEN THE APPLICATION OF THE SUSTAINABLE GROWTH POLICY OF THE ENTERPRISE AND THE GROWTH OF THE ENTERPRISE ON THE CAPITAL MARKET: EXAMPLES OF EUROPEAN COUNTRIES

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Purpose: The primary aim of this study is to examine whether the Van Horne coefficient model impacts company growth, as indicated by the EPS indicator.

Design/methodology/approach: The study was conducted on non-financial companies listed on the WIG, DAX, and OMX indices. The main tool of the analysis is the Van Horn sustainable growth model and its correlation with the EPS of the companies.

Findings: The study found that the VSGR coefficient has a negative impact on the 3-year growth of companies listed on stock exchanges in Germany and Sweden. Similar results were obtained in the 5-year period study. For the Polish market, the VSGR coefficient is not statistically significant (OLS model). However, the study highlighted the significant role of the ROE coefficient and the level of company assets in shaping EPS.

Research limitations/implications: At this stage, the study compares the Polish market to two other selected markets, which serve more as indicators of the future for us rather than as a comparative group. This perspective on the researched issue is significant but requires further investigation, taking into account other markets, including those similar to the Polish market. It is also important to extend the research to include longer time horizons in the models.

Practical implications: The conducted study aligns with the current and important trend of research on sustainable development, which is a priority element in building company strategies within the European Union. Given the lower level of development of the Polish market compared to the German or Scandinavian markets, the findings for the comparative markets provide an insight into the situation we may encounter in Poland if we choose a similar pattern of actions and development.

Originality/value: The conducted analyses are the first to use the Van Horne model on such a broad sample, indicating the potential for implementing sustainable development strategies in Polish companies with the aim of achieving development according to the model observed in Western European countries.

Keywords: Company growth, WACC, Cost of capital, Van Horne coefficient model.

Category of the paper: Research paper.

1. Introduction

Contemporary companies operate in a dynamic and competitive environment in which effective management becomes a key success factor. One of the important aspects of this management is enterprise value management, which aims to create and maximise value for all stakeholders (Friedman, 1962; Jensen, 2001).

Enterprise value management refers to the process of identifying, measuring, monitoring, and managing the value that a company generates for its owners, investors, customers, and other stakeholders (Koller et al., 2010; Lin et al., 2023). Company value can be understood as the ability to generate financial flows, stability, market reputation, innovation, intellectual capital, and many other factors that contribute to the company's long-term success (Stubelij, 2010; Subiada et al., 2018; Putra et al., 2021).

In today's global and competitive business environment, enterprise value management is becoming an indispensable tool for managers and business owners. It allows for making informed business decisions, optimising the allocation of resources, identifying valuable areas of activity, and adapting the strategy to changing market conditions (Venkataraman, Pinto, 2023).

The main purpose of the study is to determine whether the cost of capital (adjusted for WACC) will affect the company growth expressed in earnings per share (EPS) and the economic condition of the company as measured by Altman's Z-Score (Salvi et al., 2021; Raimo et al., 2021). In addition to natural growth factors, the growth potential generally enables the company to implement its development plans. Therefore, the possibility of development should be linked to the future development of the company. Danbolt, Hirst, and Jones (2013) found that measures of growth potential do not affect the growth of a company, which is reflected in the increase in EPS. Furthermore, their results were confirmed by analysing Bolek and Gniadkowska-Szymańska (2021, 2023) analysis of analysis of both developed and developing markets. The research was carried out on a group of companies in the TLS sector listed on the Warsaw Stock Exchange and the Frankfurt Börse.

The main purpose of this study is to verify whether the Van Horne coefficient model affects company growth, as expressed by the EPS indicator. The analysis related to the 3 and 5 year EPS growth and condition assessment of companies listed on the WIG index, DAX index and OMX Stockholm index is presented as OLS and panel models parameter estimations. The study was carried out using cross-sectional regression analysis and panel data. Several models were estimated using the ordinary least squares (OLS) method with the inclusion of different sets of independent variables.

The article consists of the following parts: literature review, presentation of data and methods, discussion of research results, and conclusions.

2. Review of the literature

Maximising the value of a company is increasingly the main goal of its activities. The study of value is a difficult task since there is no single, generally accepted method of measuring it, although many researchers claim that some methods give correct results (Jensen, 2010). Evaluating the effectiveness of value management requires identifying the factors that influence value and creating measures to assess the strength and quality of these processes. Efficiency measures have two forms: absolute (measure value in a given period) and relative (measure and relate to the value of capital employed). There are three groups of measures for assessing the effectiveness of value management: accounting, financial, and market measures (Kineber et al., 2024; Bryant et al., 2004).

Accounting measures are based on the use of various categories of financial results. The use of profit and ratios based on it to analyse value growth is considered by many researchers to be not entirely appropriate, since too many factors affect the final amount of the financial result (valuation rules, depreciation, etc.) (Otley, 2002; Andreicovici et al., 2023).

Consequently, a second group of metrics, financial metrics - was created. The most important methods of creating and assessing value growth here include cash flow, cost, and structure of capital, as well as the potential sustainable growth rate of the company (determined using the company's performance) (Schoenmaker et al., 2023).

The third group includes market measures, which use both groups of measures to represent value in market terms. These are primarily measures of the value created and the rate of return on capital invested in the company (Tannady et al., 2023; Prokopenko et al., 2023).

Financial metrics indicate the need to look at a company's performance not through the lens of the bottom line but through the amount of surplus cash generated from operations, as well as the cost of capital raised and meeting investor requirements (Arda et al., 2023). Two types of flows are used to assess the impact of flows on value: free cash flows to the firm as a whole (FCFF) and to owners (FCFE). Free cash flows are surplus cash generated by business operations after deducting all costs (except debt service expenses, but after taxes), at the disposal of the company's financiers (owners and creditors) (Gnap et al., 2023). Free cash flow (FCF) allows assessing the growth of the company's value and evaluating value management strategies for all groups interested in this phenomenon (Damodaran, 2024).

In the literature, factors shaping the value of an enterprise are considered with varying degrees of detail and classified according to various criteria. Damodaran (2024), discussed factors divided into main factors (free cash flow, value growth period, and cost of capital) and lower order factors (efficiency of invested capital and intangible resources). In turn, Barra and Ruggiero (2021), citing various classifications of these factors, devotes a great deal of space to macro and microeconomic factors. Macroeconomic factors, from the point of view of the enterprise, create certain conditions for doing business. These include the level of inflation,

interest rates, the corporate taxation system, state economic policy, etc. In order to increase value, business boards must take these conditions into account when making operational and strategic decisions. Microeconomic factors are directly related to company management. These include the level of risk, the quality of management, the flexibility of the company's operation in the market, the company's asset and capital structure, etc. (Farooq et al., 2021; Fernanda et al., 2024). Thus, value management is about shaping microeconomic factors in such a way that, in the environment in which companies operate, the maximum possible growth of value (Szutowski, 2024). As Massa et al. (2023) emphasises, its main sense boils down to the development (and therefore implementation) of such decisions that maximise the value of the company, and thus the wealth of the owners. It is about decisions made at different levels of the organisational hierarchy, and not only about management decisions. The effectiveness of this management depends not only on a well-prepared strategy for the development of the company and the resulting operational tasks, but on their understanding by lower-level managers and the interest of employees in general. Value management requires the development of specific procedures to make decisions and controlling their effectiveness. As Souza et al. (2020) notes, "it is an integrative process designed to improve strategic and operational decision-making by focussing on key value factors. The point is not only that they were considered from the point of view of their impact on the creation of corporate value, but that their implementation should be monitored on an ongoing basis and that the remuneration system should depend on their results (Settembre-Blundo et al., 2021).

The growth of an enterprise on the capital market has significant effects both for enterprises and the economy as a whole, as well as for investors. Access to capital is a key factor in the growth of enterprises in the capital market. By issuing shares or bonds, companies can obtain the necessary funds for development, investment, and expansion into new markets. Access to capital enables companies to pursue their growth strategies and achieve better financial results (Chikwira et al., 2023). The value of the stock reflects investors' expectations about the company's future performance. The increase in the value of shares translates into capital gains for investors and creates favourable conditions for enterprises to raise additional capital for development (Skalicka et al., 2023; Khanka et al., 2022). Furthermore, the higher value of the shares increases the attractiveness of the company to potential investors. Competition in the capital market contributes to greater innovation, efficiency, and transparency. Companies competing with each other are forced to constantly improve their offer, search for new markets, and investments, as well as effective management. For investors, a competitive capital market means greater choice of investments, the possibility of portfolio diversification, and better opportunities to compare different companies (Zinecker et al., 2022). The growth of a company on the capital market also has a significant impact on the economy. The creation of jobs, the generation of national income, innovation and development of related sectors are the key effects of the company's growth. Growth of enterprises contributes to reducing unemployment, increasing production, tax revenues, and improving the quality of life of the community

(Sun et al., 2021; Peng, Heath, 1996). For investors, the growth of a company in the capital market offers a number of benefits. Capital gains, dividends, portfolio diversification, and impact on investment profitability are important aspects of investing in the capital market. Investors can profit from the increase in the value of shares, derive income from dividend payments, minimise risk by diversifying the portfolio, and achieve attractive returns on investments. In summary, corporate growth in the capital market has a wide range of effects. Businesses have access to the capital they need, stocks are rising, competition is stimulating innovation, the economy is expanding, and investors are making profits. The growth of the enterprise on the capital market is therefore a key factor for economic development and stability (Sondakh, 2019; Rusnaeni et al., 2023; Lins, 2023; García-Meca et al., 2011; Kumar, 2004; Octaviani et al., 2022; Worokinasih et al., 2020).

3. Research methods and statistical data

The study was conducted on a group of nonfinancial companies listed on: the Warsaw Stock Exchange included in the WIG index, The Frankfurt Stock Exchange included in the DAX index, and Stockholm Stock Exchange included in the OMX Stockholm index from 01/01/2000 - 31/12/2021.

The study was carried out with annual data. All the data used in the study came from the NOTORIA and Bloomberg databases. Prices have been adjusted for changes such as preemptive rights, dividends, and splits. The table below presents data statistics for the indices analysed. Earnings per share is the factor that reflects corporate growth in terms of value maximisation; it is taken directly from the Bloomberg database as a continuous growth index calculated in terms of 3 and 5 years.

The Van Horne model was used as an indicator of stable growth. Van Horne (1987) developed a sustainable growth model to measure the sustainable growth of a firm. It comprises four accounting ratios namely: net profit margin, asset turnover, retention rate of return, and equity multiplier. This model comprises of sales performance, financing ability, and dividend policy of the firm. Van Horne's sustainable growth equation is as follows:

$$VSGR = ((b * \left(\frac{NPBT}{TO}\right) * \left(1 + \frac{D}{E}\right)) / \left(\left(\frac{A}{S} - b * \left(\frac{NPBT}{TO}\right) * \left(1 + \frac{D}{E}\right)\right)) \right) \quad (1)$$

where:

D/E - Debt to Equity,

A/S - Total Assets to Sales,

b - Retention rate,

NPBT - Net profit before tax,

TO - Turnover (Sales).

Van Horne's (1983) SGR model is the quantitative description of the sustainable growth rate which is at variance with the sales income. Van Horne and Wachowicz (2009) explain that determinants of desired sales growth are constant with the realities of the firm and the financial market place. Dhannapal and Ganesan (2010) point out that Van Horne's SGR model is a powerful tool for checking consistency between sales growth goals, operating efficiency and financial objectives of a firm.

The analysis related to the 3 and 5 year EPS growth and condition assessment of companies listed on the WIG index, DAX index and OMX Stockholm index is presented as OLS and panel models parameter estimations. The study was carried out using cross-sectional regression analysis and panel data. Several models were estimated using the ordinary least squares (OLS) method with the inclusion of different sets of independent variables.

Moreover, tests for the presence of fixed and random effects were also carried out (redundant fixed effects, Wald test, random effects – Breusch-Pagan test). Fixed-effects models were applied because they are a class of statistical models in which the levels of the independent variables are assumed to be constant and only the dependent variable changes in response to the levels of the independent variables. The description of the interpretation of the test results is as follows:

Test for the occurrence of fixed effects (Wald test), Hypothesis H0 - no fixed effects:

- If the p-value of Wald's test is < 0.05 , reject the hypothesis that there are no fixed effects, so there are fixed effects in the model.
- if the p-value of Wald's test > 0.05 , the hypothesis of no fixed effects cannot be rejected.

Additionally, to exclude the occurrence of random effects from the analysis, the Breusch-Pagan test was performed for models with random component decomposition. The Breusch-Pagan test, based on the Lagrange multiplier, allows for verification of the hypothesis that the model with random component decomposition is statistically better than the model in which no effects were distinguished in group and/or temporary. Test for the occurrence of random effects (Breusch-Pagan test), hypothesis H0, no random effects:

- If the p-value of the Breusch-Pagan test is < 0.05 , reject the hypothesis that there are no random effects, so there are random effects in the model.
- if the p-value of Breusch-Pagan's test > 0.05 , the hypothesis of no random effects cannot be rejected.

The model for the total sample is presented in Equation 2.

$$EPS_n = a_{1t} + a_2 VSGR + a_3 \ln TA_t + a_4 ROE_t + e_t \quad (2)$$

where:

VSGR - Van Horne coefficient model calculated according to equation (1),

ROE - Return on equity,

TA - Total Assets,

EPS - Earnings per share,

n - 3 or 5 years period.

The cross-sectional OLS models are applied with Total Assets as a logarithmic variable that is explained by the growth of the EPS index.

The independent variables were not collinear because most of the VIF values were <5 .

4. Results

The main purpose of this study is to verify whether the Van Horne coefficient model affects company growth, as expressed by the EPS indicator. Based on the methodology described above, the relationship between the EPS growth of companies and the Van Horne coefficient model, as well as control variables for the collected data, was first tested according to formula (2) to obtain the results described in Table 1. In total, calculations of different model variants were carried out, taking into account all the variables concerning the 3 and 5 year growth indices. The model specification was also analysed using the RESET test, which indicated the correctness of the model used ($p\text{-value} > 0.05$). The results of the RESET test obtained show that the specification of the variables in the model is correct.

Table 1.

Estimation of the model parameters from equation (2) using the OLS method

	POLNAD	SWEDEN	GERMANY
Dependent variable: EPS 3			
const	197,696 **	-6,51732	93,204
VSGR	0,008	-0,014 **	-0,022 ***
ln(TA)	-46,125 ***	1,71176	-6,305
ROE	2,234 **	-0,0098 *	-0,600
R2	0.0027	0,013	0.0031
Dependent variable: EPS 5			
const	-0,082	-7,57287	26,160 ***
VSGR	0,026	-0,011 ***	-0,023 ***
ln(TA)	3,909 *	2,1836 **	-1,439 *
ROE	1,137 **	-0,012 ***	-0,1990 **
R2	0.0010	0,047	0,0195

Note: ***/** Ratios are significant at 10% / 5% / 1%, respectively.

Source: the author's own elaboration.

As Table 1 shows, the VSGR coefficient has a negative impact on the 3-year growth of companies listed on the markets in Germany and Sweden. However, in the case of companies on the Polish market, no such relationship was observed, perhaps because the Polish market is still a developing market, which significantly affects the results obtained. Regarding the remaining control variables adopted for the study, i.e., the size of assets and the return on equity (ROE), only in the case of the Polish market can a significant impact of these variables on the 3-year growth of the entering enterprises measured by the increase in EPS be observed.

In the case of the company's 5-year growth, measured by EPS growth, the VSGR coefficient is statistically significant only for companies listed on the markets in Germany and Sweden. In the case of companies on the Polish market, the VSGR coefficient is not significant for the 5-year growth of the company. Regarding the remaining control variables adopted for the study, i.e., the size of assets and the return on equity (ROE), in the case of all countries analysed, a significant impact of these variables on the 5-year growth of the entering enterprises measured by the increase in EPS can be observed.

Then tests for the presence of fixed and random effects were carried out (redundant fixed effects, Wald test, random effects - Breusch-Pagan test). Cross-sectional regression analysis was performed by estimating models with fixed and random effects for various combinations of effects. As models with random effects did not produce statistically significant results, only models with fixed effects were further analysed.

Table 2 presents the results of the estimation of model parameters from Equation 1 using panels method with fixed effects.

Table 2.

Estimation of the model parameters from equation (2) using the panel method

	POLNAD	SWEDEN	GERMANY
Dependent variable: EPS 3			
const	373,315 **	-16,744	389,668 *
VSGR	0,385	-0,011	-1,913
ln(TA)	-82,215 ***	3,5124	-30,452
ROE	2,871 **	-0,029	-1,746
Dependent variable: EPS 5			
const	-170,250 ***	-78,554 ***	360,773 **
VSGR	0,013	0,001	-1,326
ln(TA)	27,044 ***	9,243 ***	-28,084 *
ROE	4,129 ***	-0,007	-1,939 **

Note: */**/** Ratios are significant at 10% / 5% / 1%, respectively.

Source: the author's own elaboration.

As presented in Table 2, in the case of the 3-year growth of the company, measured by the increase in EPS, the results obtained during the first estimation using the OLS method were not confirmed; perhaps this is due to the weak impact of this variable on the growth of companies. As for the other control variables adopted for research, i.e. the size of assets and the return on equity (ROE), only in the case of the Polish market can a significant impact of these variables on the 3-year growth of entering enterprises measured by the increase in EPS be observed, which is consistent with the results obtained in the OLS method.

In the case of the company's 5-year growth, measured by EPS growth, the VSGR coefficient is not statistically significant for any analysed case. As for the remaining control variables adopted for the study, i.e., the size of assets and the return on equity (ROE), in the case of all countries analysed, a significant impact of these variables on the 5-year growth of the entering enterprises measured by the increase in EPS can be observed.

5. Discussion and conclusions

Communication related to business responsibility and sustainability is becoming an increasingly important issue in the context of enterprises. This is expected primarily by consumers, but also by investors, employees, and regulators. Hence, the ESG standards, which will soon apply to the vast majority of enterprises operating in the EU. about the issues that modern enterprises should pay attention to, so as not to strive only for profits, but also to act in the long term, paying attention to factors that affect each of us. Therefore, ESG is a natural extension of CSR activities, i.e., corporate social responsibility.

In the analysis presented in the article, it was found that the VSGR coefficient has a negative impact on the company's growth over a 3-year period for companies from the Swedish and German markets, i.e. the better the implementation of the company's sustainable development policy measured by the VSGR index, the lower the growth a given company may record. Perhaps this is due to the fact that all these companies use the idea of sustainable development in their management, which is expensive and generates very high costs in the initial phase. These results were also not confirmed in fixed effect panel studies, allowing us to conclude that these relationships are very weak. As for the company's growth in a longer, 5-year period, in this case the impact of the VSGR coefficient on its size was also recorded for companies from the Swedish and German markets. The lack of such dependence on the Polish market may be due to the fact that in the case of the Polish capital market, which is still classified as a developing market, the application of ESG-related policies is only just being implemented in many companies. Therefore, the results regarding companies included in the entire WIG index show that both for the company's growth over a 3-year and 5-year period, the application of the sustainable development policy measured by the VSGR coefficient has no impact on the size of this growth, which was also confirmed by panel models. At this stage, the study compares the Polish market to two other selected markets, which serve more as indicators of the future for us rather than as a comparative group. This perspective on the researched issue is significant but requires further investigation, taking into account other markets, including those similar to the Polish market. It is also important to extend the research to include longer time horizons in the models.

The conducted study aligns with the current and important trend of research on sustainable development, which is a priority element in building company strategies within the European Union. Given the lower level of development of the Polish market compared to the German or Scandinavian markets, the findings for the comparative markets provide an insight into the situation we may encounter in Poland if we choose a similar pattern of actions and development.

The conducted analyses are the first to use the Van Horne model on such a broad sample, indicating the potential for implementing sustainable development strategies in Polish companies with the aim of achieving development according to the model observed in Western European countries.

Further research should expand the analysis of firms by size and stage of development in light of value growth. In the next stage of the research, more extensive analyses and robustness tests will be performed to address endogeneity issues such as measurement errors, confounding factors, simultaneity, etc., and the analysis will be performed using panel data with observations over time (one year).

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