# DETERMINANTS OF CORPORATE GROWTH: EMPIRICAL INVESTIGATION OF THE SOUTHEAST EUROPEAN COMPANIES

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## Abstract

*The growth of companies is always a current and challenging topic for corporate managers who tend to maximize growth. In order for companies to grow they need to undertake investment projects with a positive NPV that will increase production capacity, output and sales. But, on the other hand, the financing of new assets should be in a way that will not deplete financial resources and will enable sustainable growth. In this paper, we investigate the internal company-specific determinants of corporate growth in Southeast Europe on a sample of 791 companies. We found that SEE companies achieved moderate annual growth of 6.73% per year. This is primarily and mostly due to the small volume of capital investments, which in turn is a result of poor operating performance and low profitability. Retained earnings are the primary internal source of investment financing along with additional borrowing for these companies that have no other financing opportunities available, operating in underdeveloped financial market. The growth of the companies in SEE is positively affected by capital investments, financial leverage, operating cash flow, ROA, ROE, firm's size, net profit margin and assets turnover. The growth of the companies in SEE is negatively affected by non-debt tax shield, tangibility, account receivable collection period, inventory conversion period and cash conversion cycle. Companies in SEE need to improve working capital management practices, to increase its effectiveness and efficiency, in order to generate greater profitability and consequently greater company growth.*

**Keywords:** corporate growth, sales growth rate, sustainable growth, South East Europe, emerging markets

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## 1. Introduction

The growth and growth determinants of companies have been researched for a long time, but is still relevant challenging topic for many researchers. Successful companies are those that go through predictable growth stages, from introduction, accelerated growth, maturity, to decline. But not all companies manage to climb to the next scale and reach the final stage. There are two sets of thoughts prevailing among researchers, where some suggest that the growth path followed by the enterprise is linear or predictable, and others suggest that the growth is fairly opportunistic term or unpredictable (Gupta et al., 2013). Gibrat's law of proportionate effect states that the proportional rate of growth of a firm is independent of its absolute size (Samuels, 1965). Hence, firm size distribution is log-normal. However, a number of studies have found a negative relationship between company growth and size, some have found no relationship, and still others claim that small companies are experiencing rapid disproportionate growth. They all deny Gibrat's law, as we will see in the literature review section.

Companies often have different growth rates throughout each stage of the business cycle. When companies are just starting, they tend to have high growth rates because they are growing from nothing. Businesses can experience rapid growth when they launch because they are reaching an audience for the first time. As a business matures, its growth rate can decrease to a more sustainable rate, even while the business expands. Some companies experience multiple phases of rapid growth as they launch new products or develop branding initiatives. Finally, a business that is in decline will have a low or even negative growth rate.

The growth of companies is influenced by a number of external and internal factors. External factors in the first line are the factors related to the industry, macroeconomic environment, the phase of the business cycle, inflation, interest rates, the degree of development of financial markets, access to capital, availability of resources - financial and material, such as government policies, fiscal and monetary policy, policy aimed to support the development of companies, growth grants, etc. At the same time a large set of internal factors determine the growth of companies. These include management related factors such as quality of management, corporate governance, business strategy, organization, innovation, strategic partnership, human resource management, quality of workers, etc. On the other side are the company's operating performance and financial policies. The success of the company in the past creates the funds necessary for future growth providinging internally generated growth of the company.

Company growth can be measured in different ways, through sales growth, assets growth, growth in the number of employees, value growth, business volume growth, and so on. The most commonly used measure is sales growth, which we take in this paper as a definition of company growth. In this paper we investigate firm-specific determinants of corporate growth in the case of companies from ten Southeast European countries (Bosnia and Herzegovina, Bulgaria, Montenegro, Croatia, Greece, Romania, North Macedonia, Slovenia, Serbia and Turkey). Based on the data from their financial statements for the period 2011-2019, we defined a wide range of ratios as independent variables against which we regressed the growth of sales.

Research on the determinants of company growth has so far have been conducted to a greater extent in the case of developed countries as well as in the case of underdeveloped countries and emerging markets. To our knowledge, this is the first paper to be conducted at the level of the entire SEE countries. These countries are post-socialist, having been developing a market economy for three decades. Operating in emerging markets, these companies operate in a completely different economic environment than those in developed countries. They operate in underdeveloped financial markets that are bank-centered, where primary and seasonal issues of shares or other securities are rare, and in some countries do not exist (Naumoski et al., 2022). Thus, these companies have limited financial resources of capital to undertake investment projects that will provide growth of production capacities, growth of output and growth of sales. The growth of the companies is largely based on the internally generated sources of retained earnings, and the appropriate borrowing from risk averse banks that find it difficult to approve new loans without offering attractive investment projects. Hence, the growth of companies depends on the good operating performance and financial policy of the company. Exactly the indicators related to the internal economy of the company were the inspiration for research as determinants of the growth of the companies.

This paper is organized as follows. In addition to the introductory part, in part two we give an overview of the results of similar research. In section three we explain the data, define the variables used in the analysis and give a look at the summary statistics and correlation. In section four we give an overview of the regression analysis. Section five concludes and provides an overview of the limitations of this research and makes recommendations.

## 2. Literature review

Many authors have explored the determinants of company growth from different perspectives, with different depths and different methodologies, in the case of small, medium and large companies, in the case of different countries. There are many who research company-specific determinants, some of which involve external factors. More specifically, within company-specific determinants, some explore the impact of determinants related to corporate governance, management, knowledge, innovation, and so on. There are also a number of studies that examine the impact of company operating and financial policies, and other accounting variables, as in the case of our research. Therefore, we further review other selected studies that are similar to our research.

The determinants of companies' growth differ in different sectors and industries in which companies operate. In a most recent study, Vukovic et al. (2022) investigated the determinants of the company's growth in the field of agriculture, forestry, and fisheries at the European Market during 2014–2019 period. They conclude that company size has a negative impact on companies' growth, ROA and leverage have a positive impact on growth, while growth is not related with the liquidity measured by current ratio, and with the profitability measured by ROE besides internal funds from retained earnings are considered main source of financing growth. They finally conclude that for the companies of this sector, external determinants are eventually more important for the growth, as are the credit and natural conditions, agricultural policy measures, and adequate institutional support through the provision of financial support and encouragement of exports of products. The growth of the food and textile companies in Pakistan is positively affected by their profitability and negatively by the leverage, while the innovation, liquidity and solvency have no influence of their asstets growth (Bashir et al., 2020). The Spanish hotel sector companies' growth depends on profitability, size, age and leverage (Claver et al., 2006). Taiwan's manufacturing firm growth is positively related with the firm size, age, capital intensity, lagged R&D, export ratio, investment ratio, and profits, while high debt-to-equity ratio is associated with low corporation growth (Liu and Hsu, 2006). Banks growth in European Union depends on their profitability, that is inversely related with the capital–assets and liquidity ratios, so as with the growth (Goddard, 2004). Profitability-driven management strategy limits Korean construction companies' growth, and profitability in the current period can be stimulated by the high growth of the previous period in the conditions of a stable macroeconomic environment (Yoo and Kim, 2015). In the restaurant industry, profit creates growth, but growth impedes profitability. More precisely, prior year's profitability of

restaurant firms had a positive impact on the growth rate of the current year, while the current and prior year's growth rates had a negative impact on the current year's profitability (Jang and Park, 2011). R&D intensity has a positive effect on firm's growth rate and firm's size has a mixed relationship with sales growth at the upper quantile, thus Gibrat's law is rejected in the Korean pharmaceutical industry (Chung et al., 2019).

The determinants of growth of the small and medium sized companied have been investigated by many authors. Mateev and Anastasov (2010) on a sample of 560 fast growing small and medium enterprises from six transition economies found that firm size when measured by firm total assets, leverage, current liquidity, future growth opportunities, internally generated funds, and factor productivity are important factors in determining a firm's growth and performance. Factors that significantly influence manufacturing SMEs growth in Greece are profitability, liquidity, reliance on long-term debt, employee productivity, fixed assets turnover and restricted sales credit terms (Voulgaris et al, 2003). Carvalho et al. (2013) on a sample of 182 fitness SMEs in Portugal found that smaller companies grew faster than larger ones, so the company size has a statistically significant negative impact on growth, while the internal finance, external finance and labour productivity are important determinants to increase growth. In a "bank-oriented" financial system in which access to external finance is difficult, the growth of the SMEs depends crucially on bank loans. Commercial bank loan play significant role in SMEs financing and growth of the economy in Nigeria in the long run (Alese and Alimi, 2014). Similarly, Becchetti and Trovato (2002) investigating a sample of Italian SMEs, also conclude that firms with higher availability of external finance (high leverage firms) grow much more than low leverage firms. They also present a negative relationship between the SMEs growth and the age and firm's size. Additionally, on a sample of 22,000 Italian SMEs, Sampagnaro (2013) found that firm size, non-financial debt and internal cash flows play important role on their growth. Furthermore, Megaravalli and Sampagnaro (2019) on a sample of 45,000 Italian family business small- and medium-scale enterprises, state that the growth of the SMEs mostly rely on liquidity, solvency, firm age, cash flow, and efficient and effective working capital management. Honjo and Harada (2006) found that cash flow have an impact on the growth of younger Japanese SMEs. Cassia et al. (2009) state that European hyper-growth firms are younger, more involved in merger and acquisition, have large volume of current and future investments, high leverage, lower solvency, rely more upon investments in fixed assets and also the ownership plays important role for their growth. Serrasqueiro et al. (2010) also confirmed that age, debt, and R&D intensity have negative relationship with SMEs growth in circumstances when the size of these companies is growing considerably,

and there is a negative relationship between cash flow and growth when there is a reduction in their size. Heshmati (2001) found that size has negative relationship with growth when measured with the number of employees and positive when measured with sales and is not related when measured with assets. Also, a negative relationship between the age and growth of firms is found in the employment model, while a positive in assets and sales growth models. Kachlami and Yazdanfar (2016) found positive and significant influence of profitability, short-term debt and size on a firm's growth across in Swedish SMEs. In the case of SMEs in Finland, Niskanen and Niskanen (2006) note that younger firms exhibit higher growth rates, increase in size initially increases growth in the case of smaller firms, but the effect is reversed after a certain level, and close lending relationships enhance growth. Rafiki (2020) investigated much than financial determinants of the SMEs in the Kingdom of Saudi Arabia and found that size, experience of the manager, training, financing and the network relationship have a significant influence on the growth, while the education and firm's age do not have a significant relationship with the firm's growth.

Megaravalli and Sampagnaro (2018) investigating the predictors of firm growth in the case of Indian firms, concluded that chances of being high-growth firm are higher for young firms and liquidity ratio is one of the important predictors of firm growth and also emphasizes the fact that better liquidity position of the company reflects higher growth and reduces the chances of default. Khaldun and Muda (2014) concluded that the liquidity ratios together significantly influence growth of the food and beverages sector companies listed on Indonesia stock exchange.

Potential growth of Canadian firms is influenced by firm size, current liquidity, leverage, cash flow, age, and industry (Gill and Mathur, 2011). On a sample of 1,450 Indian firms, Mishra and Soumya (2018) point out that efficiency in management of current assets and capital (both short- and long-term) is the most critical factors that determines the firm revenue growth. Previously on a sample of 250 Indian companies, for the period 2004-2014, Aggarwal (2015) concluded that size, advertising intensity, age, profitability, research and development intensity, solvency, leverage, efficiency, diversification, and nature of industry are statistically significant in determining the growth.

The growth of sales of Ecuadorian companies is negatively retiled with size, innovations and indebtedness and positively related with the age (Simbana et al., 2017). Markman and Gartner (2002) found that extraordinary high growth (e.g., sales growth rates of 500 percent to 31,000 percent over five years) is not related to firm profitability.

On a sample of Central and East European countries Malinić et al. (2020) investigated the determinants of firms' growth in periods of crisis

model firm growth as a function of two country-specific variables (inflation and capital market liquidity) and four company-specific variables (financial leverage, asset turnover, profit margin and ratio between cash flow and assets). Their conclusion is different for the different markets. Perić et al. (2020) also examining the period of great financial crisis on a sample of Croatian firms in the manufacturing and hospitality industries found that asset growth is positively associated with the size of the firms.

Growth of the firm is not significantly related with the company size, but investing in new technology, international diversification and profitability are more important factors (Hermelo and Vassolo, 2007). Leverage and initial financial size have great impact on the growth rates in the case of new firms, but leverage has little impact on the economic significance of the conditional age and size relationships with firm growth (Huynh and Petrunia, 2010). The leverage gave positive impact on the firm's growth (Hameed et al., 2012). Liquidity also plays important role on corporate growth, the stronger liquidity constraints, the more size negatively affects firm's growth (Fagiolo and Luzzi, 2006).

### 3. Data description and measurement

The study of the impact of internal company determinants on the company growth rate in this paper was done in the case of a large sample of companies from South-East Europe. The SEE list includes ten countries: Bosnia and Herzegovina, Bulgaria, Montenegro, Croatia, Greece, Romania, North Macedonia, Slovenia, Serbia and Turkey. Researching a large sample should allow us to draw more reliable conclusions. The data are provided from the financial statements of the SEE companies from the Thomson Reuters Eikon and Datastream database for the period 2011-2019. The sample includes only the companies listed on the national stock exchanges. The reason why we focus only on listed companies is because these data are the most reliable, since they have to comply with the special requirements imposed by stock exchanges to meet corporate governance criteria and especially for financial reporting of audited financial statements. The sample was calibrated to provide data consistency. More specifically, only companies from the real sector were taken in the sample, and we excluded all companies from the financial sector as well as utilities, given that they operate in conditions of statutory and other legal obligations and have to meet a number of regulatory requirements. Moreover, the definitions for some accounts are quite different from those of the real sector companies, such as inventories. Furthermore, all companies that have inadequate accounting data, negative capital, negative assets, negative sales, negative

operating cycle and other inadequate accounting data were excluded from the sample. Finally, we cut the lower and upper 1% extremes. These criteria have provided us with a sample of 791 company, and a total of 7,780 firm-year observations.

### 3.1 Measure of sales growth rate

The growth of the companies is measured by the actual sales growth. The actual sales growth rate is the rate at which the sales growth on an annual basis. It is expressed as:

$$g = \frac{\Delta Sj,t}{Sj,t-1} = \frac{Sj,t - Sj,t-1}{Sj,t-1}$$

where, $g$ is the *Sales Growth Rate*, $\Delta S_{j,t}$ the absolute annual growth of the *Sales* of the company $j$ at time $t$, $S_{j,t}$ is the *Sales* of the company $j$ at time $t$, and $S_{t-1}$ is the previous year's *Sale* of the company $j$.

### 3.2 Exogenous variables

The explanatory variables of the company's growth rate are all those internal company variables related to the financial policies and operating performance of the company that have an impact on revenue growth. Our intention was to include as many variables as possible. Their definition and measurement are presented in the following table.

*Table 1. Definitions of exogenous variables*

| | |
|---|---|
| Capital investments | = (CAPEX$_t$ – Depreciation&Amortization$_t$) / Total Assets $_t$ |
| Financial leverage | = Total Liabilities $_t$ / Total Assets $_t$ |
| Operating cash flow | = (Net profit before tax + Depreciation and amortization) $_t$ / (Total Current Liabilities)$_t$ |
| Non-debt tax shield | = (Depreciation and Amortization) $_t$ / (Total Assets)$_t$ |
| ROA | = (Net profit)$_t$ / (Total Assets) $_t$ |
| ROE | = (Net profit)$_t$ / (Total Equity) $_t$ |
| Firm size | = $ln$ (Total Assets)$_t$ |
| Net profit margin | = (Net profit)$_t$ / Sales$_t$ |
| Assets turnover | = Sales$_t$ / (Total Assets) $_t$ |
| Tangibility | = (Tangible fix assets) $_t$ / (Total Assets)$_t$ |
| Account receivable period | = (Account receivable $_t$ / Sales $_t$) x 365 |
| Inventory conversion period | = (Inventory $_t$ / Cost of Goods Sold $_t$) x 365 |
| Cash conversion cycle | = Account receivable period + Inventory period – Account payables period |

### 3.3 Summary statistics and correlation analysis

The summary statistics for the whole sample is presented in Table 2, and at the level of individual countries in Table 3. The companies in SEE achieved moderate growth in the period 2011-2019, and grew at an average actual rate of 6.73% per year. This moderate growth is far from desirable for managers. However, at the level of individual countries there are large differences in the actual company growth. Leading the growth are companies from Turkey with an average actual rate of 12.6%, Bulgaria with 10.5% and Serbia with 9.8%. Moderate growth rate was achieved by the companies in Bosnia and Herzegovina (4.7%), Croatia (3.4%) and Romania (5.8%), anemic growth was achieved by the companies in Greece (1.7%), North Macedonia (0.1%) and Slovenia (1.8%), while companies in Montenegro achieved a negative growth rate, i.e., on average decreased by –0.3% per year.

*Table 2. Summary statistics, period 2011 – 2019*

| Variable | Mean | 25th percentile | Median | 75th percentile | Standard deviation |
|---|---|---|---|---|---|
| Sales growth rate | 0.0673 | -0.0864 | 0.0341 | 0.1648 | 0.3666 |
| Capital investments | 0.0078 | -0.0205 | -0.0055 | 0.0180 | 0.0674 |
| Financial leverage | 0.5012 | 0.2840 | 0.4805 | 0.6671 | 0.3373 |
| Operating cash flow | 0.4409 | 0.0274 | 0.1699 | 0.5050 | 1.3172 |
| Non-debt tax shield | 0.0350 | 0.0182 | 0.0295 | 0.0437 | 0.0270 |
| ROA | 0.0105 | -0.0205 | 0.0113 | 0.0491 | 0.1244 |
| ROE | 0.0407 | -0.0277 | 0.0274 | 0.1052 | 0.3913 |
| Firm size | 19.2 | 17.8 | 19.1 | 20.6 | 2.0 |
| Net profit margin | 0.0225 | -0.0406 | 0.0164 | 0.0729 | 0.3999 |
| Assets turnover | 0.7629 | 0.3356 | 0.6036 | 0.9601 | 0.8150 |
| Tangibility | 0.5441 | 0.3765 | 0.5431 | 0.7100 | 0.2237 |
| Account receivable period | 110.1 | 37.8 | 69.8 | 126.2 | 173.3 |
| Inventory period | 168.4 | 38.0 | 84.8 | 172.2 | 295.4 |
| Cash conversion cycle | 111.2 | 8.1 | 77.2 | 180.4 | 403.6 |

*Source: Author's own calculations*

The actual growth of the companies in SEE is certainly a reflection of the economic, political and social environment in which they operate, that are external factors outside our analysis. Our research focuses on the impact that company-specific determinants, which have an internal nature, have on the growth rate of companies. Company-specific determinants show that insufficient company growth in SEE is due to poor operating performance and inadequate financial policies. The moderate growth was primarily due to the weak investment activity of companies in SEE. The growth of companies requires investment in new assets of various kinds, increase of production

capacities, which will contribute to increased output, sales, which in turn leads to increased profitability which is the basis for generating retained earnings as internal sources to launch a new investment cycle and sustainable growth. Companies in SEE had a very small volume of capital investments, which on average annually amount to only 0.78% of the total assets. Exactly investing in new production facilities is the basis for generating new production which will subsequently lead to growth in sales revenues. Capital investments are largest in Turkey, but unfortunately, half of the countries have a negative investment rate, i.e. disinvestment process, since depreciation is not used to cover capital expenditures but to cover other operating expenses. Namely, although the depreciation and amortization is 3.5% of the total assets (non-debt tax shield), still the capital investments are only 0.78% of the total assets. The disinvestment process is present in all countries, given that the capital investment ratio is lower than the non-debt tax shield in all cases. An additional factor in this context is the low tangibility. Namely, the share of fixed assets in the total assets is 54.4%, which indicates that the companies in SEE do not have capital intensive production.

Companies in SEE have poor operating performance. The return on total assets is only 1.05%, which is due to the actual negative average profit margin of -2.3% and the low total assets turnover ratio (assets utilization) of 0.76 times.

Also, working capital management is not at an appropriate level. With the long average account receivables collection period of 110.1 days and inventory conversion period of 168.4 days, the operating cycle is 278.5 days which is equivalent to one year according to the number of working days. The cash conversion cycle is 111.2 days for which companies should provide financing for procurement. However, the large number of days on the account receivables collection period should contribute to sales growth. In SEE companies this is not the case but is due to insufficient liquidity to timely cover due liabilities.

Companies in SEE also hold large volumes of inventories that can be the result of unmarketable and outdated inventories. The large volume of inventories and account receivables together held by SEE companies contributes to a large current liquidity ratio of 2.7. According to this indicator, companies in SEE on average have satisfactory liquidity, and yet accont reciavble days and account payables days are still large. Therefore, we employ another indicator that is considered more important for measuring liquidity, it is the operating cash flow ratio which is 0.44. The operating cash flow ratio is a measure of the number of times a company can pay off current debts with cash generated within the same period. An operating cash flow ratio of less than one indicates the firm has not generated enough cash to

cover its current liabilities. The operating cash flow ratio assumes cash flow from operations will be used to pay current liabilities. The current ratio, meanwhile, assumes current assets will be used.

In addition, SEE companies have inadequate financial policies in the area of capital structure, more specifically in the structure of debts. The financial leverage according to the total liabilities ratio is 50.1% from the total assets, i.e. the SEE companies finance half of the total assets with liabilities. Liabilities without debt is 26.1% of the total assets, which mostly refers to trade credit provided by suppliers. Total debt is 23.8% of total assets, where long-term debt is only 10.6% of total assets.

SEE companies operate in underdeveloped financial markets. New shares issues are very rare, and in some countries do not occur at all. The growth of the companies is financed mostly with equity from retained earnings and depreciation, and the borrowing is almost entirely by raising bank loans. However, borrowing from banks is very low, especially long-term borrowing of investment loans, which is necessary to finance new capital investments. This is due to the insufficient supply of good investment projects that are acceptable for financing by banks, which in turn results in a low growth rate of companies.

Table 4 shows the Pearson's correlation coefficients. Sales growth shows a low correlation with independent variables, with most of them having a positive correlation. More importantly, there is a very low correlation between the independent variables indicating the absence of the multicollinearity problem in the regression analysis.

**Table 3.** Summary statistics by countries, period 2011 – 2019

| | Sales growth rate | Capital investments | Financial leverage | Operating cash flow | DDebt tax shield | on-debt tax shield | ROA | ROE | irm size | Net profit margin | ssets turnover | Tangibility | Account receivable period | Inventory period | Cash conversion cycle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bosnia and Herzegovina | 0.0465 | -0.0125 | 0.3243 | 0.8120 | -0.1646 | .0413 | 0.0017 | -0.0199 | 8.3 | -0.0396 | .4176 | 0.7113 | 134.7 | 296.7 | 181.9 |
| Bulgaria | 0.1050 | -0.0048 | 0.4485 | 0.3787 | 0.0522 | .0373 | 0.0087 | 0.0397 | 7.1 | -0.0623 | .6838 | 0.5746 | 132.2 | 323.5 | 170.2 |
| Croatia | 0.0343 | 0.0120 | 0.4905 | 0.4274 | 0.1198 | .0393 | 0.0094 | 0.0254 | 0.7 | -0.0129 | .6807 | 0.6296 | 61.6 | 81.6 | -22.9 |
| Greece | 0.0174 | 0.0096 | 0.6301 | 0.2108 | 0.2120 | .0317 | -0.0130 | 0.0174 | 8.7 | -0.0904 | .7814 | 0.4978 | 144.1 | 132.0 | 131.3 |
| Montenegro | -0.0027 | -0.0208 | 0.4620 | 0.4126 | 0.0673 | .0478 | -0.0296 | 0.1139 | 7.5 | -0.0648 | .4001 | 0.7384 | 97.0 | 371.3 | -36.5 |
| North Macedonia | 0.0012 | 0.0035 | 0.3810 | 0.4856 | 0.0262 | .0332 | 0.0183 | 0.0412 | 0.9 | 0.0191 | .6239 | 0.5891 | 143.8 | 263.8 | 215.7 |
| Romania | 0.0585 | 0.0073 | 0.4086 | 0.5054 | 0.1228 | .0354 | 0.0071 | 0.0355 | 8.8 | -0.0041 | .7253 | 0.5743 | 101.7 | 190.8 | 140.6 |
| Serbia | 0.0977 | -0.0147 | 0.4509 | 0.3455 | -3.3398 | .0301 | 0.0127 | 0.0302 | 1.8 | -0.0413 | .7079 | 0.5334 | 142.6 | 212.3 | 99.1 |
| Slovenia | 0.0177 | 0.0071 | 0.4943 | 0.4745 | 0.1081 | .0452 | 0.0087 | 0.0598 | 8.5 | 0.0025 | .8920 | 0.6067 | 56.0 | 51.8 | 31.1 |
| Turkey | 0.1259 | 0.0248 | 0.5294 | 0.5988 | 0.1090 | .0331 | 0.0376 | 0.0796 | 9.7 | 0.0513 | .9469 | 0.4678 | 75.5 | 89.0 | 85.1 |

**Table 4.** Correlation analysis

| | Sales growth rate | Capital investments | Financial leverage | Operating cash flow | Non-debt tax shield | ROA | ROE | Firm size | Net profit margin | Assets turnover | Tangibility | Account receivable period | Inventory period | Cash conversion cycle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sales growth rate | 1 | | | | | | | | | | | | | |
| Capital investments | 0,109 | 1 | | | | | | | | | | | | |
| Financial leverage | 0,023 | 0,015 | 1 | | | | | | | | | | | |
| Operating cash flow | 0,063 | 0,037 | -0,264 | 1 | | | | | | | | | | |
| Non-debt tax shield | -0,034 | -0,156 | 0,028 | 0,073 | 1 | | | | | | | | | |
| ROA | 0,163 | 0,102 | -0,171 | 0,358 | -0,037 | 1 | | | | | | | | |
| ROE | 0,070 | 0,035 | 0,074 | 0,126 | 0,031 | 0,120 | 1 | | | | | | | |
| Firm size | 0,043 | 0,150 | 0,054 | 0,051 | -0,038 | 0,121 | 0,070 | 1 | | | | | | |
| Net profit margin | 0,102 | 0,081 | -0,211 | 0,365 | -0,009 | 0,499 | 0,082 | 0,107 | 1 | | | | | |
| Assets turnover | 0,091 | 0,040 | 0,111 | -0,033 | 0,033 | 0,122 | 0,057 | 0,012 | 0,085 | 1 | | | | |
| Tangibility | -0,055 | -0,008 | -0,130 | 0,036 | 0,079 | -0,143 | -0,073 | 0,080 | -0,120 | -0,361 | 1 | | | |
| Account receivable period | -0,067 | -0,059 | 0,049 | -0,056 | -0,160 | -0,058 | -0,039 | -0,101 | -0,132 | -0,184 | -0,107 | 1 | | |
| Inventory period | -0,065 | -0,063 | -0,085 | -0,005 | -0,101 | -0,060 | -0,043 | -0,132 | -0,102 | -0,176 | 0,024 | 0,153 | 1 | |
| Cash conversion cycle | -0,093 | -0,028 | -0,153 | 0,028 | -0,110 | 0,007 | -0,033 | -0,083 | 0,055 | -0,069 | -0,120 | 0,298 | 0,532 | 1 |

*Source: Author's own calculations*

## 4. Regression analysis

We employed a panel regression model to investigate the determinants of corporate growth. We regressed the *Sales Growth Rate* against the exogenous variables that are firm-specific determinants as described above. Specifically, we estimate the following equation:

$$GROWTH_t = \alpha + \beta_1\ INVESTMENTS_t + \beta_2\ LEVERAGE_t + \beta_3$$
$$CASHFLOW_t + \beta_4\ NDTS_t + \beta_5\ ROA_t + \beta_6\ ROE_t + \beta_7\ SIZE_t + \beta_8\ MARGIN_t +$$
$$\beta_9\ TURNOVER_t + \beta_{10}\ TANG_t +$$
$$+ \beta_{11}\ ARCP_t + \beta_{12}\ IP_t + \beta_{13}\ CCC_t$$

*where, GROWTH* is Sales Growth Rate; *INVESTMENTS* is capital investments; *LEVERAGE* is financial leverage; *CASHFLOW* is operating Cash Flow; *NDTS* is non-debt tax shield; *ROA* is the Return on Total Assets; *ROE* is the Return on the Total Equity; *SIZE* is the firm size measured as natural logarithm of the Total Assets; *MARGIN is* net-profit margin; *TURNOVER is* the total assets turnover; *TANG is* assets tangibility; ARC is the Account receivable collection period; IP is the inventory conversion period; CCC is the cash conversion cycle.

Using the Hausman test, we examined which regression model was most appropriate, the fixed or random effect OLS model. The results showed that the fixed effects model is best for the given data sample. According to Deloof (2003), fixed effects estimation assumes firm-specific intercepts, which capture the effects of those variables that are particular for each firm and that are constant over time. A disadvantage of fixed effects estimation is that it eliminates anything that is time-invariant from the model.

The results of the regression analysis are presented in Table 5. All independent variables are statistically significant, with most of them at a significance level of 1%. The company's growth has a positive relationship with capital investment, leverage, liquidity measured by operating cash flow, profitability measured by ROA, ROE, net-profit margin, assets utilization and firms size. The growth of the company has a negative relationship with the elements of working capital - account receivable collection period and inventory period, and cash conversion cycle. Also, the relationship is negative with non-debt tax shield and tangibility.

Sales growth is strongly positively influenced by capital investment. Sales growth requires investing in more assets of all kinds. Companies need to invest in fixed and permanent working capital to increase production capacity, output and ultimately increase sales. However, investments in working capital have a positive impact on sales growth, given that the increase in tangibility i.e., investments in fixed assets has a negative impact

on sales growth. This can be explained by the insufficient economies of scale and low fixed assets productivity that do not generate a large enough marginal output for each unit of fixed capital engaged. Production of companies in SEE is largely labor-intensive, without a high degree of automatizaton and robotization that is characteristic in the case of developed market economies.

Corporate growth is a formalization of the adage "It takes money to make money." (Higgins et al., 2022). Sales growth requires investing in new assets to increase production capacity, and they have to be paid. SEE companies operate in underdeveloped financial markets and do not have many opportunities to raise investment capital. Capital markets are shallow, young and emerging, stock issues are rare in some of these countries, and in some countries are completely absent. Hence, the most important source of financing for capital investments are the internal sources of retained earnings and the accompanying borrowing from banks, which is associated with increased retained earnings (Naumoski et al., 2022). Hence, it is clear why there is a positive statistically significant relationship between the growth of companies and financial leverage. Borrowing by the company is important for financing new capital investments.

Retained earnings and the accompanying new borrowing generate money for capital investments, but only in limited amounts. Unless the company is willing to sell common stock or borrow excessive amounts, this limit sets a growth ceiling that can be achieved without straining its resources. Opportunities for new shares issues on their financial markets are very limited, and SEE companies are moderately indebted. Long-term borrowing, primarily from banks, in these countries is the basis for financing capital investments and amounts to only 10.6% of total assets. However, short-term liabilities are more important, which, as we have emphasized, have a positive impact on growth, rather than investing in fixed assets.

*Table 5. Regression analysis*

| Exogenous variables | Dependent variable: Sales Growth Rate | |
|---|---|---|
| | Coefficient | Standard Error |
| C | -0.9351*** | 0.2922 |
| Capital investments | 0.4361*** | 0.0879 |
| Financial leverage | 0.1371*** | 0.0289 |
| Operating cash flow | 0.0080** | 0.0044 |
| Non-debt tax shield | 0.8814*** | 0.2970 |
| ROA | 0.3357*** | 0.0464 |
| ROE | 0.0397*** | 0.0119 |
| Firm size | 0.0509*** | 0.0148 |
| Net profit margin | 0.0469*** | 0.0155 |
| Assets turnover | 0.1659*** | 0.0164 |
| Tangibility | -0.1523*** | 0.0535 |
| Account receivable period | -0.0003*** | 0.00004 |
| Inventory period | -0.0002*** | 0.00003 |
| Cash conversion cycle | -0.000024* | 0.00002 |
| $R^2$ | 0.2229 | |
| Adjusted $R^2$ | 0.1177 | |
| F-statistic | 2.1180 | |
| Prob(F-statistic) | 0.0000 | |

*** *means significant at 1%, ** means significant at 5%, * means significant at 10%*
*Source: Author's own calculations*

Operating performances of the SEE companies have positive impact on company's growth. This can be explained in the same line with the above. Namely, the retained profit is the most important source for financing of the capital investments, which in turn are necessary for the growth of output and sales. The more profitable the company is, the more it will be able to generate the necessary capital for capital investments. Therefore, there is a positive and statistically significant relationship between the company's growth and assets utilization (assets turnover ratio) and with the net-profit margin, which are indicators of the company's operating performance. Hence, according to the DuPont formula, they generate ROA, which also shows a positive and statistically significant relationship with the company's growth. Given that additional borrowing added to retained earnings is the second most important source for generating growth, and ROA multiplied by financial leverage (measured by equity multiplier) according to DuPont formula gives ROE, the existence of a positive and statically significant relationship between ROE and company growth is obvious. This confirms

the thesis that the better the operating performance and profitability of companies in SEE, the greater their growth.

Companies in SEE experience poor operating performance and low profitability, have moderate indebtedness because they do not have attractive investment projects acceptable for financing by risk averse banks, which together leads to moderate corporate growth.

In this context is the existence of a positive impact of liquidity measured by the operating cash flow ratio with the growth of companies. Total liabilities without debt account for 26.1% of the total resources used by companies to finance growth-generating business operations. The most of those liabilities are current liabilities related to trade credits provided by suppliers. Therefore, the timely payment of those obligations is crucial for maintaining good business relations for securing production inputs.

Although depreciation, after retained earnings, is the second major internal source of funds for capital investments, SEE companies do not invest the full amount, as it is explained above. It is a process of disinvestment. Therefore, the amount of amortization and depreciation expressed through the non-debt tax shield has a negative relationship with the company's growth.

The size of the company also has a positive and statistically significant relationship with the growth of the company. Larger companies are experiencing higher sales growth. In this research the size of the company is measured by the size of the total assets. This is another confirmation of the thesis that investing in new assets that increase production capacity enables increased output and increased sales. Many other authors have found a positive relationship between company size and sales growth (Mateev and Anastasov, 2010; Kachlami and Yazdanfar, 2016; Niskanen and Niskanen, 2006).

The management of working capital components has a negative impact on the growth of companies in SEE. However, the negative impact of working capital components on sales growth is indirect, through their negative impact on profitability which is the basis for generating internal sources of growth financing.

However, in the case of the SEE companies the average account receivables collection period is very long and is 110.1 days with a standard deviation of 173.3 days. Holding of inventories is also considered necessary to increase production and sales, but on the other hand holding large amounts of inventories results in high storage costs. The larger the inventories and the longer the inventory conversion period, the higher these costs, resulting in lower profitability for companies. The average inventory conversion period for SEE companies is 168.4 days with a standard deviation of 295.4 days.

Additionally, it may also be the result of having outdated inventories. The operating cycle as a sum of these two parameters is 278.5 days, which is approximately equal to the number of working days in a calendar year. This means that companies in SEE have poor working capital management, although the account payables period of 167.3 days is larger than the account receivable collection period of 110.1. The long operating cycle affects companies in SEE to have lower turnover and lower profitability (according to the DuPont formula). Additionally in that context is the long cash conversion cycle. Cash conversion cycle is the difference between the operating cycle and the account payables period. It is actually the period in which the company uses money to finance business operations from certain sources. This incurs financing costs and further negatively affects profitability. Due to the indirect impact they have on profitability, the elements of working capital have a negative impact on the growth of companies in SEE. SEE corporate managers need to redesign their operating policies and improve working capital management practices to ensure greater profitability and greater corporate growth.

Although all variables in the regression analysis are statistically significant, the coefficient of determination is still very low. The selected set of variables related to the operating performances and financial policies of the company, as well as the control variables, explain the growth of the companies to a small extent. There are a number of other company-specific variables that affect the growth of companies such as corporate strategy, organization, business processes and practices, innovation, managerial quality, other management characteristics, quality and other characteristics of employees, location, type of ownership, concentration of ownership, corporate governance, etc. Also a number of external factors have a major impact on corporate growth, such as macroeconomic determinants, interest rate, inflation rate, GDP growth rate, level of financial system development, access to financing, monetary policy, exchange rate, government subsidies and development support policies. It is obvious that the growth of companies is a complex issue. These factors are beyond the scope of this paper.

## 5. Conclusion

Among the earliest research on the growth of companies is Gibrat's law where it is assumed that the size of the firm has a log-normal distribution because the proportional growth rate of a firm is independent of its absolute size. However, a number of studies have refuted this claim, and have shown that successful companies go through several stages in the life cycle, ranging from introduction, rapid growth, maturity to decline. The growth of

companies has different intensity in different phases. But the growth of companies is determined by a number of factors of external and internal nature. In this paper, the growth of companies is defined by the growth of sales. In order for a company to grow, it needs investments in fixed and current assets, which need to be financed. The research on company-specific determinants of corporate growth in this paper was conducted in the case of SEE companies using their financial and accounting data for the period 2011-2019. Given that they operate in emerging markets with undeveloped financial markets, they face with limited access to capital for investing in new facilities that should generate growth. Shares issuance is rare, and in some countries does not exist, so financing their growth is limited to the growth of internal sources of retained earnings and additional borrowing from banks.

Companies in SEE achieved a moderate average annual growth rate of 6.73%, for the period 2011 – 2019, which is lower than the satisfactory for corporate managers. This insufficient growth was mostly due to the low volume of capital investments, which amounted to only 0.78% of the total assets. Although depreciation and amortization accounts for 3.54% of total assets, meaning that they do not adequately replace spent assets. The ability of companies in SEE to invest primarily depends on their profitability, which in turn is low given the low operating performances measured according to the low asset utilization and low net profit margin. Ineffective and inefficient working capital management has an additional impact on low profitability. The growth of SEE companies is positively related to capital investments, financial leverage, operating cash flow, ROA, ROE, firm size, net profit margin, and assets turnover. But it is negatively related to non-debt tax shield, tangibility, account receivable collection period, inventory conversion period, and cash conversion cycle.

## References

Aggarwal, P. (2015) An Empirical Evidence of Measuring Growth Determinants of Indian Firms. Journal of Applied Finance & Banking, 5(2), 45-66.

Alese, J., and Alimi, Y.O. (2014) Small and Medium-Scale Enterprises Financing and Economic Growth in Nigeria: Error Correction Mechanism. European Journal of Globalization and Development Research, 11, 639–652.

Bashir, Z., Arshad, M., Asif, M., and Khalid, N. (2020). Driving Factors of Growth Evidence in the Food and Textile Sectors of Pakistan. Financial Internet Quarterly, 16(1), 11-19. https://doi.org/10.2478/fiqf-2020-0002

Becchetti, L., and Trovato, G. (2002) The Determinants of Growth for Small and Medium Sized Firms. The Role of the Availability of External Finance. Small Business Economics, 19, 291–306. https://doi.org/10.1023/A:1019678429111

Carvalho, P.G., Maçãs Nunes, P., and Serrasqueiro, Z. (2013). Growth determinants of small- and medium-sized fitness enterprises: empirical evidence from Portugal. European Sport Management Quarterly, 13:4, 428-449, DOI: 10.1080/16184742.2013.810296

Cassia, L., Cogliati, G.M., and Paleari, S. (2009) Hyper-Growth among European SMEs: An Explorative Study. Available online: https://ssrn.com/abstract=1389521

Chung, H., Eum, S., and Lee, C. (2019). Firm Growth and R&D in the Korean Pharmaceutical Industry. *Sustainability*, 11(10): 28-65. https://doi.org/10.3390/su11102865

Claver, E., Andreu, R. and Quer, D. (2006). Growth strategies in the Spanish hotel sector: determining factors. International Journal of Contemporary Hospitality Management, 18(3), 188-205. https://doi.org/10.1108/09596110610658607

Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? Journal of Business Finance & Accounting, 30(3&4), 573–587. DOI: 10.1111/1468-5957.00008

Fagiolo, G., and Luzzi, A. (2006) Do liquidity constraints matter in explaining firm size and growth? Some evidence from the Italian manufacturing industry. Industrial and Corporate Change, 15(1), 1–39

Gill, A., and Mathur, N. (2011) Factors that Affect Potential Growth of Canadian Firms. Journal of Applied Finance & Banking, 1 (4), 107–123.

Goddard, J.A., Molyneux, P., and Wilson, J.O.S. (2004). Dynamics of Growth and Profitability in Banking. Journal of Money, Credit, and Banking, 36(6), 1069-1090. doi:10.1353/mcb.2005.0015.

Gupta, P., Guha, S., and Krishnaswami, S (2013). Firm growth and its determinants. Journal of Innovation and Entrepreneurship, 2, 1-14. https://doi.org/10.1186/2192-5372-2-15

Hameed, I., Iqbal, A., and Ramzan, N. (2012) The Impact of Debt Capacity on Firm's Growth. American Journal of Scientific Research, 59, 109–115.

Hermelo, D.F., and Vassolo, R. (2007). The Determinants of Firm's Growth: An Empirical Examination. Abante, Escuela de Administracion. Pontificia Universidad Católica de Chile,10(1), 3-20.

Heshmati, A. (2001). On the Growth of Micro and Small Firms: Evidence from Sweden. Small Business Economics, 17, 213–228. https://doi.org/10.1023/A:1011886128912

Higgins, R. C., Koski, J.L., and Mitton, T. (2022). Analysis for financial management, 13th ed., McGraw, New York

Honjo, Y., and Harada, N. (2006) SME Policy, Financial Structure and Firm Growth: Evidence from Japan. Small Business Economics, 27, 289–300. https://doi.org/10.1007/s11187-005-6703-0

Huynh, K., and Petrunia, R. (2010) Age effects, leverage and firm growth. Journal of Economic Dynamics and Control, 34(5), 1003–1013. https://doi.org/10.1016/j.jedc.2010.01.007

Jang, S., and Park, K. (2011) Inter-relationship between firm growth and profitability. International Journal of Hospitality Management, 30(4), 1027–1035. https://doi.org/10.1016/j.ijhm.2011.03.009

Kachlami, H., and Yazdanfar, D. (2016). Determinants of SME Growth: The Influence of financing pattern: An empirical study based on Swedish data. Management Research Review, 39, 966–986.

Khaldun, K.I., and Muda, I. (2014) The influence of profitability and liquidity ratios on the growth of profit of manufacturing companies. International Journal of Economics, Commerce and Management, 2(12), 1–17.

Liu,W.C., and Hsu, C.M. (2006) Financial Structure, Corporate Finance and Growth of Taiwan's Manufacturing Firms. Review of Pacific Basin Financial Markets and Policies, 9(1), 67–95.

Malinić, D, Denčić-Mihajlov, K., and Grabiński, K. (2020) Reexamination of the determinants of firms' growth in periods of crisis. Zbornik Radova Ekonomskog Fakulteta u Rijeci / Proceedings of Rijeka School of Economics, 38(1), 101-124.

Markman, G.D., and Gartner,W.B. (2002) Is extraordinary growth profitable? A study of Inc. 500 high–growth companies. Entrepreneurship Theory and Practice, 27(1), 65–75. https://doi.org/10.1111/1540-8520.t01-2-00004

Mateev, M., and Anastasov, Y. (2010). Determinants of small and medium sized fast-growing enterprises in central and eastern Europe: A panel data analysis. Financial Theory and Practice, 34, 269–295.

Megaravalli, A.V., and Sampagnaro, G. (2018) Firm age and liquidity ratio as predictors of firm growth: Evidence from Indian firms. Applied Economics Letters, 25, 1373–1375. DOI: 10.1080/13504851.2017.1420883.

Megaravalli, A.V., and Sampagnaro, G. (2019) Predicting the growth of high-growth SMEs: Evidence from family business firms. Journal of Family Business Management, 9, 98–109.

Mishra, S., and Soumya, G.D. (2018) Predictors of firm growth in India: An exploratory analysis using accounting information. Cogent Economics & Finance, 6(1), 1553571

Naumoski, A., Arsov, S., & Cvetkoska, V. (2022). Asymmetric information and agency cost of financial leverage and corporate investments: evidence from emerging South-East European countries. Scientific Annals of