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MASTER'S THESIS

DETERMINANTS OF SME PERFORMANCE IN SELECTED CEE COUNTRIES

Ljubljana, October 2019 ALICA ŠKAPUR

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SME – Small and medium-sized enterprises

CEE – Central and Eastern Europe

GDP – Gross domestic product

ATM – Automated teller machine

DTF – Distance to frontier

EBRD – European Bank for Reconstruction and Development

SBA – Small business act

GCI – Global competitiveness index

CPI – Corruption perceptions index

ROA – Return on assets

OLS – Ordinary least squares

FE – Fixed effects

RE – Random effects

SEMEDA – Small and Medium Enterprises Development Authority

SBI – Structural business indicators

INTRODUCTION

The category of micro, small and medium-sized enterprises (hereinafter: SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million (Commission, 2003, p. 39).

SMEs play a major role in most economies. In 2016 only 0.2% of enterprises which operated in the EU-28 non-financial business sector were not SMEs. They generated 57% of value added and 67% of total employment in the EU-28 non-financial business sector by employing 93 million people (Muller & others, 2017, p. 6).

As we can conclude, SMEs are essential for successful economic growth and social development. Nation's economic health is dependent on the health of SMEs. Employment creation by SMEs is very important for countries all over the world, but SMEs are not only great source of employment. They can also become a source of innovation and increased productivity. This is important because increasing the productive powers of a country is one of the key pillars for development (Herr & Nettekoven, 2017, p. 3). The SME sector plays crucial part in modern economy, proving to be the most attractive and tremendous innovative system. Showing their economically and socially beneficial effects led to the consideration of the SME sector as a field of strategic interest for the economy (Neagu, 2016, p. 332).

Based on the above information, we can see the importance of the SMEs for the economy which makes them an important research field.

However, SMEs have many obstacles on their way to success, and many weak points compared to larger firms. Some of them include reduced capital which makes them vulnerable in case of economic shock, the lack of functional distribution systems and access to performant and accessible marketing services, low access to new technologies, the lack of sufficient management and economical knowledge (Neagu, 2016, p. 335). SMEs also have financing problems. They usually tend to be informal, young, have less publicly available information and operate in unfamiliar sectors. This leads to higher information asymmetries and risk which then discourages bank lending. Also, SMEs often do not have enough assets that can be used as collateral. Additionally, these firms might find it too costly to list in capital markets (Abraham & Schmukler, 2017). SMEs are caught in a vicious circle because of the causal connections between the demand shock, the decline in working capital and the increase in insolvencies (Organisation for Economic Co-operation and Development, 2009, p. 10). Also, SMEs are more vulnerable to legislative changes, compared to the larger firms. This is because they are less proficient in dealing with the complexities of regulation and are unable to spread the costs of compliance across large-scale operations (Chittenden & Poutziouris, 2009, p. 475).

Taking into account SME importance to the economy of the countries in which they operate, it is crucial to understand which country indicators affect SME performance. Different countries have different business environments, macroeconomic indicators and indicators of financial development. All of these factors affect SME performance. In turn, different countries have different levels of SME performance. Therefore, it is of great significance to research performance of SMEs from different countries to encompass how different indicators and business environment affect SME performance.

The main purpose of the thesis is to research and measure the determinants of the SME performance in the selected Central and Eastern Europe (hereinafter: CEE) countries.

SMEs being extremely important to the economy but still facing obstacles and barriers to their development and having different performance levels in different countries, is what motivated this thesis. It is significant to understand which factors actually affect performance of SMEs. This will help focus the attention on the relevant factors. The purpose of this thesis is also to deepen the knowledge on the factors affecting SME performance by research being undertaken on the chosen countries of the CEE region and suggesting policy implications in order to help SMEs achieve better performance.

Chosen CEE countries are the following: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

For the purpose of this thesis, regression analysis in Stata will be conducted to test several research questions. It will be used to measure relation between different indicators and SME performance.

The following research questions will be explored:

1: Better macroeconomic indicators, such as higher GDP, lower unemployment rate and inflation rate, are positively associated with the performance of SMEs.

2: Better performing financial markets are associated with the better relative performance of SMEs.

3: Better performance in terms of selected economic factors, such as paying taxes, starting a business and registering a property, are positively associated with the performance of SMEs.

In order to set theoretical framework, method of theoretical analysis will be used. To deepen the knowledge on the different factors affecting SME performance, it is important to analyze existing literature. In this way better understanding of how these factors can affect SME performance can be reached. This will set the base for empirical research.

I will use secondary data that is publicly available for the empirical analysis. I will use Eurostat database “Annual enterprise statistics for special aggregates of activities” as the

primary source of information on the SME turnover (Eurostat, no date). This database is part of the Main indicators of structural business statistics databases. I will use the turnover or gross premiums written - million euro. SME turnover relative to the country gross domestic product (hereinafter: GDP) will serve as the dependent variable in this thesis. This indicator is chosen as it provides a comprehensive review of SME performance by providing turnover for SMEs grouped based on different economic activities. Also, by using SME turnover relative to the country GDP, dependent variable is formed by taking into account different levels of GDP in different countries chosen for this research.

Regarding the observation period, the last year available in this database at the time of writing was 2015, and the first year with comparable data is 2008, so this period of eight years will be used for the analysis. Eurostat will be used as the only source of data on SME turnover for all countries of interest because it ensures that the same business categories of SMEs are used for measurement in all ten countries of interest for this research. SMEs are classified according to their economic activities in this Eurostat database.

Three groups of variables will be employed as independent variables. The first one is comprised of macroeconomic indicators such as GDP, government debt, government expenditure, unemployment rate and inflation rate. The second group contains indicators of financial development such as bank deposits to GDP, automated teller machines (hereinafter: ATMs) per 100,000 adults, regulatory capital to risk-weighted assets and bank return on assets (before tax). The third group are indicators taken from the doing business data. They are: starting a business (distance to frontier, hereinafter: DTF), paying taxes (total tax rate, % of profit), registering property (DTF) and resolving insolvency (recovery rate, cents on the dollar). Also, global competitiveness index and corruption perceptions index will be used as variables. As an additional factor, transitional indicators assessed by European Bank for Reconstruction and Development (hereinafter: EBRD) will be taken into account. Assessments are made in six areas: large scale privatization, small scale privatization, governance and enterprise restructuring, price liberalization, trade and foreign exchange system and competition policy. Value variables will be deflated by the relevant deflator. Three sets of dummy variables will be included in the regression: time, country and industry.

Wide variety of variables is chosen in order to see which ones have more effect on the SME performance, rather than just focusing on one group of indicators. This ensures broader applicability and forecasting efficiency. Also, knowing which factors are hindering SME development will lead to suggestions in policy changes in different countries that could help SMEs achieve better performance. For example, as SMEs face more barriers regarding legislative changes, governments should try to administer special support mechanisms, including tax and regulatory measures (such as exemptions), with the aim of improving the economic and technological environment of smaller businesses (Chittenden & Poutziouris, 2009, 475). Regarding financing issues, policy makers and market participants should try to implement different initiatives to try to broaden access, such as setting up credit information sharing mechanisms to promote bank lending to SMEs, fostering the use of movable assets

as collateral and using public credit guarantees to channel credit toward SMEs. In addition, governments should try to sidestep banks by creating secondary exchanges targeted at SMEs (Abraham & Schmukler, 2017).

The thesis is sctructured such that the first section of the paper offers SME definition, while second section offers overview of SMEs in specific CEE countries, based on the small business act factsheets. Third section describes and provides literature review on the chosen SME performance determinants. Fourth section defines data and methodology used and offers graphical review of chosen performance determinants in the specific time period, while fifth section presents summary statistics, main regression results and their interpretation. The last section provides concluding remarks about the main findings.

1 SMES IN CHOSEN CEE COUNTRIES – THE SBA

In this section, I will present overview of SMEs in chosen CEE countries, based on the small business act (hereinafter: SBA) factsheets. First, I will start with SME definition and then continue with the SBA definition. After that, I will present SBA principles and then offer the overview of SMEs in chosen countries based on the SBA factsheets and the mentioned principles.

1.1 SME Definition

SMEs are defined in the Commission recommendation of 6 May 2003 concerning the definition of SMEs (Commission, 2003). The definition entered into force on January 1st, 2005 and is mandatory for national State aid schemes and Community programs.

In annex, article 2 of title 1, SMEs are defined as follows: "The category of SMEs is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million. Within the SME category, a small enterprise is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million. Within the SME category, a microenterprise is defined as an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million" (Commission, 2003, p. 39).

Enterprises qualify as micro, small or medium-sized enterprises if they fulfil maximum ceilings for staff headcount and either a turnover ceiling or a balance sheet ceiling (Commission, 2003, p. 36). Based on this definition, the following Table 1 is created, for an easier visual representation.

Table 1: SME Definition

SME Definition			
Enterprise category	**Ceilings**		
	Staff headcount	Turnover	Balance sheet total
Medium-sized	< 250	≤ 50m	≤ 43m
Small	< 50	≤ 10m	≤ 10m
Micro	< 10	≤ 2m	≤ 2m

Source: Commission (2003).

1.2 SBA Definition

The small business act (hereinafter: SBA) is an overarching framework for the EU policy on SMEs. It aims to improve the approach to entrepreneurship in Europe, simplify the regulatory and policy environment for SMEs, and remove the remaining barriers to their development (European Commission, no date).

SBA had been a result of the fact that EU still needed to take some significant measures, despite the continuous encouraging process, in order to reach the full potential of SMEs. Progress was made in creating friendlier business environment for SMEs by both, the EU and the Member states, shown by the mid-term review of the EU's modern SME policy in the period from 2005 to 2007 (Commission of the European Communities, 2007, p. 5). But still there were some market failures that SMEs were facing in areas such as finance (venture capital at most), environment, research and innovation. Regarding innovation, only a few European SMEs innovate successfully, compared to the larger companies (Commission of the European Communities, 2008, p. 3).

1.3 SBA Principles

After defining SBA, in this section I will present small business act principles. SBA has a set of 10 principles that are expected to guide the conception and implementation of policies at the both levels (EU and Member State level).

1.3.1 Entrepreneurship Principle

The first SBA principle states the following: "Create an environment in which entrepreneurs and family businesses can thrive and entrepreneurship is rewarded" (Commission of the European Communities, 2008, p. 5). This means that a better care for future entrepreneurs has to exist, enforced by fostering entrepreneurial talent interest especially among women

and young people. Additionally, conditions for business transfers should be simplified, so that when small business owners retire, the business does not have to be shut down only because of difficulties in business transfers. Moreover, schools should focus more on entrepreneurship, so children can learn to appreciate it from early age and can learn the needed skills (Commission of the European Communities, 2008, p. 5).

1.3.2 Second Chance Principle

The second SBA principle states: "The Member States should ensure that honest entrepreneurs who have faced bankruptcy quickly get a second chance" (Commission of the European Communities, 2008, p. 7). 15% of all company closures are a result of bankruptcy. Making a new start is complicated because lengthy bankruptcy procedures have to be completed. In the EU, it takes between four months and nine years, on average, to complete a bankruptcy. Besides these procedures, the problem is that in the EU, the stigma of failure is still present and re-starter's business potential is underestimated (Commission of the European Communities, 2008, p. 7).

1.3.3 Think Small First Principle

The third principle says: "The EU and Member States should design rules according to the "Think Small First" principle by taking into account SMEs' characteristics when designing legislation and simplify the existing regulatory environment" (Commission of the European Communities, 2008, p. 7). Within many constraints that SMEs face, the one that is the most burdensome is compliance with the administrative regulations. A regulatory and administrative burden that large companies face is disproportionate to the burden that SMEs face. SBA is establishing the "Think Small First" principle as the central point. It tries to make being SME friendly a mainstream policy. This is based on the conviction that rules must respect the majority that is using them. Society's recognition of entrepreneurs is what is the most important for achieving the best possible framework conditions for SMEs (Commission of the European Communities, 2008, p. 3).

1.3.4 Responsive Administration Principle

The fourth principle states the following: "The EU and Member States should make public administrations responsive to SME needs, making life as simple as possible for SMEs, notably by promoting e-government and one-stop-shop solutions" (Commission of the European Communities, 2008, p. 9). Responsive and modern administration can help SMEs in a way that it leaves them more time for innovation and job creation, directly influencing success and growth (Commission of the European Communities, 2008, p. 9). The focus is mostly on measures to eliminate duplicate requests for information, increase engagement with stakeholders, simplify licensing procedures, reduce time and cost to register a business

and reduce overall administrative and tax burdens. Most EU member states now have one-stop-shops, but the problem remains the fact that not all of them cover every administrative requirement under one roof (European Commission, 2017).

1.3.5 State Aid and Public Procurement Principle

The fifth principle is as follows: "The EU and the Member States should adapt public policy tools to SME needs. They should make use of the Code of Best Practice providing guidance to contracting authorities on how they may apply the EC public procurement framework in a way that facilitates SMEs' participation in public procurement procedures. To address the market failures that SMEs face throughout their lifecycle they should make better use of the possibilities offered by Community State Aid rules to support start-ups and provide incentives for SMEs" (Commission of the European Communities, 2008, p. 10).

1.3.6 Access to finance

The sixth principle says: "The EU and Member States should facilitate SMEs' access to finance, in particular to risk capital, micro-credit and mezzanine finance and develop a legal and business environment supportive to timely payment in commercial transactions" (Commission of the European Communities, 2008, p. 11). After the administrative burden, access to finance is the second biggest concern for SMEs. Banks and investors, lead by risk aversion, are reluctant to finance firms in their early expansion and start-up stages. In addition, entrepreneurs often lack the skill to best present their investment projects to potential financiers and they also lack the knowledge on the advantages and disadvantages of different forms of finance. There is still need to further improve SMEs' access to finance (Commission of the European Communities, 2008, p. 11). Even though nearly all member states have established measures to facilitate access to finance for SMEs, specific measures to reduce tax inconsistencies are still non-existent (European Commission, 2017, p. 21).

1.3.7 Single market principle

This principle is as follows: "The EU and Member States should encourage SMEs to benefit more from the opportunities offered by the Single Market, in particular through improving the governance of and information on Single Market policy, enabling SMEs' interests to be better represented in the development of standards and facilitating SMEs' access to patents and trademarks" (Commission of the European Communities, 2008, p. 12).

1.3.8 Skills and innovation

This principle states: "The EU and Member States should promote the upgrading of skills in SMEs and all forms of innovation. They should encourage investment in research by SMEs

and their participation in R&D support programmes, transnational research, clustering and active intellectual property management by SMEs" (Commission of the European Communities, 2008, p. 14).

1.3.9 Environment principle

This principle is as follows: "The EU and Member States should enable SMEs to turn environmental challenges into opportunities. They should provide more information, expertise and financial incentives for full exploitation of the opportunities for new "green" markets and increased energy efficiency, partly through the implementation of environmental management systems in SMEs" (Commission of the European Communities, 2008, p. 16).

1.3.10 Internationalization

This principle is as follows: "The EU and Member States should support and encourage SMEs to benefit from the growth of markets outside the EU, in particular through market-specific support and business training activities" (Commission of the European Communities, 2008, p. 17).

1.4 SBA Results in Chosen Countries

In this chapter, performance of the chosen countries in SBA principles will be reviewed.

1.4.1 Bulgaria

Regarding the "Think small first" principle, Bulgaria scores below EU average, even though there was improvement since 2008. The regulatory and administrative burden on the SMEs are still high (European Commission, 2016, p. 5).

With respect to "Entrepreneurship" principle, Bulgaria again scores below EU average. (European Commission, 2016, p. 6). As for "Second chance" principle, Bulgaria scores in line with the EU average. The time it takes to resolve insolvency remains the biggest concern, as it is one of the four poorest performers in the EU (European Commission, 2016, p. 7).

"Responsive administration" principle also scores below EU average. Compared with previous year, the time to start a business has been halved. The time it takes to pay taxes is more than double the EU average (European Commission, 2016, p. 8).

Regarding "State aid and public procurement" principle, Bulgaria again scores below the EU average (European Commission, 2016, p. 9). As for "Access to finance" principle,

Bulgaria performs in line with the EU average. A number of financial instruments have been implemented in recent years (European Commission, 2016, p. 10).

With respect to "Single market", Bulgaria performs below the EU average. However, the average transposition delay has improved as compared with the previous year and Bulgaria is now close to the EU average (European Commission, 2016, p. 11).

Regarding "Skills and innovation" principle, Bulgaria performs a lot below the EU average. Nevertheless, since 2008 some progress has been made in this SBA area (European Commission, 2016, p. 12). On "Environment" principle, it again scores below EU average (European Commission, 2016, p. 13). "Internationalization" principle also scores below EU average. Moderate progress has been made since 2008 (European Commission, 2016, p. 14).

1.4.2 Czech Republic

Concerning "Think small first" principle, the results are not entirely positive. SME representatives consider the reduction of the administrative burden to be stagnant (European Commission, 2016a, p. 6).Regarding "Entrepreneurship" principle, Czech Republic performed in line with the EU average. Ease of transferring a business remains a major issue (European Commission, 2016a, p. 7).

As for "Second chance" principle, Czech Republic also performed in line with the EU average and considerable progress was made regarding this principle (European Commission, 2016a, p. 8). With respect to "Responsive administration" principle, Czech Republic scored below the EU average. Time needed to deal with fiscal administration and cost of enforcing contracts are two main administrative areas that need improvement (European Commission, 2016a, p. 9).

Regarding "State aid and public procurement" principle, this is one of the best performing SBA areas for the country and also the one that progressed the most since 2008 (European Commission, 2016a, p. 10). As for "Access to finance" principle, Czech Republic performed in line with the EU average. It achieved positive but still limited progress in making finance more accessible to SMEs (European Commission, 2016a, p. 11).

Concerning "Single market" principle, Czech Republic also performed in line with the EU average. Figures indicate substantial progress since 2008 (European Commission, 2016a, p. 12). Regarding "Skills and innovation" principle, Czech Republic again performed in line with the EU average (European Commission, 2016a, p.13).

As for "Environment" principle, performance was above EU average. However, stakeholders still believe that SMEs are not sufficiently aware of the support measures available to them in this area (European Commission, 2016a, p. 7). With respect to "Internationalization" principle, performance was below EU average. This is partly

explained by the country's geographical location, which naturally privileges intra-EU trade (European Commission, 2016a, p. 15).

1.4.3 Estonia

Regarding "Think small first" principle, considerable progress was made. However, the long-term trend of the country is still slightly moving downwards since 2008. Current improvements are seen in most indicators (European Commission, 2016b, p. 5).

As for "Second chance" principle, Estonia scores in line with EU average (European Commission, 2016b, p. 7). Regarding "Responsive administration" principle, Estonia displays overall the best performance compared to other EU countries. In general, the administrative burden for SMEs is not heavy (European Commission, 2016b, p. 8).

Regarding "State aid and public procurement" principle, Estonia continues to perform above the EU average (European Commission, 2016b, p. 9). Concerning "Access to finance" principle, Estonia again scores better than other EU member states. In general, statistical data confirm that firms get easier access to finance from the private capital market than from public financial support tools (European Commission, 2016b, p. 10).

With respect to "Single market principle", Estonia is continuously improving its results and it still stays above the EU average (European Commission, 2016b, p. 11). Regarding "Skills and innovation" principle, Estonia still scores within the EU average, even though since 2008 there is a continuous downward trend (European Commission, 2016b, p. 12).

Regarding "Environment" principle, Estonia again has a negative trend during the past years, but still scores above EU average (European Commission, 2016b, p. 13). As for the "Internationalization" principle, Estonia scores within EU average. It is in line with the administrative burden of trade (European Commission, 2016b, p. 14).

1.4.4 Hungary

With respect to "Think small first" principle, Hungary made limited progress in recent years. Some key indicators have been implemented since 2008, even though some important still need to be put in place (European Commission, 2016c, p. 6). Regarding "Entrepreneurship" principle, Hungary scores below EU average. Overall, the level of entrepreneurial activity in Hungary has remained stable since 2008 and is on a par with the EU average (European Commission, 2016c, p. 7).

Concerning "Second chance" principle, it is an SBA area where Hungary performs the worst. Little progress has been made since 2008 (European Commission, 2016c, p. 8). As for "Responsive administration" principle, Hungary scores below the EU average. Since the

start of the SBA, it has improved on all indicators, but still many weaknesses remain (European Commission, 2016c, p. 9).

With recpect to "State aid and public procurement" principle, Hungary performs in line with the EU average. The time it takes to get paid is now slightly longer than in the EU in general (European Commission, 2016c, p. 10). Regarding "Access to finance" principle, Hungary´s performance dropped this year to being on a par with the EU average. The main causes for this change are related to credit finance (European Commission, 2016c, p. 12).

Concerning "Single market" principle, Hungary scores within EU average. The trading performance of Hungarian SMEs improved slightly (European Commission, 2016c, p. 13). As of "Skills and innovation" principle, Hungary performs below the EU average. It is the only SBA domain where Hungary´s performance has deteriorated since the adoption of the SBA in 2008 (European Commission, 2016c, p. 14).

Concerning "Environment" principle, Hungary performs below the EU average (European Commission, 2016c, p. 15). Regarding "Internationalization" principle, Hungary performs within the EU average (European Commission, 2016c, p. 16).

1.4.5 Latvia

Progress on the "Think Small First" principle is considered significant as it is implemented across legislations that have impact on SMEs (European Commission, 2016d, p. 5). As of "Entrepreneurship" principle, Latvia is the second best performer amongst all EU countries, right behind Netherlands (European Commission, 2016d, p. 6).

Concerning "Second chance" principle, Latvia scores above EU average. Since 2008 its performance has been constantly improving over time (European Commission, 2016d, p. 7). Regarding "Responsive administration" principle, Latvia performs above EU average and improved its results continuously since 2008 (European Commission, 2016d, p. 8).

With respect to "State aid and public procurement" principle, Latvia performs far above most of the other EU countries. It improved its performance since 2008 mostly because of the SMEs' success rate in public contracts (European Commission, 2016d, p. 9). Regarding "Access to finance" principle, Latvia performs above the EU average. There is a continuous upward trend since 2008 (European Commission, 2016d, p. 10).

As of "Single market principle", Latvia performs within the EU average and its performance has been showing a positive trend since 2008 (European Commission, 2016d, p. 11). Regarding "Skills and innovation" principle, its performance is among the weakest performances in the EU. It has been stagnating since 2008, but the share of SMEs that are selling and purchasing online increased slightly (European Commission, 2016d, p. 12).

With respect to “Environment” principle, Latvia performs above the EU average. However, performance trend is negative since 2008. Latvia has adopted and implemented a moderate number of measures in this SBA area since 2008 (European Commission, 2016d, p. 13). Regarding “Internationalization” principle, Latvia scores below EU average, but the trend is slightly positive since 2008 (European Commission, 2016d, p. 14).

1.4.6 Lithuania

Regarding “Think small first” principle, several key measures for the implementation of this principle have been adopted since 2008. However, there is still room for improvement in the way these mechanisms operate (European Commission, 2016e, p. 5). Concerning “Entrepreneurship” principle, Lithuania experienced a steady improvement and performed above the EU average (European Commission, 2016e, p. 6).

As of “Second chance” principle, Lithuania scores below the EU average. Moderate progress has been achieved since 2008 (European Commission, 2016e, p. 7). Concerning “Responsive administration” area, Lithuania performs above the EU average. It has been following a continuous upward trend since 2008 (European Commission, 2016e, p. 8).

With respect to “State aid and public procurement” principle, Lithuania has a good overall performance, even though it has slight downward trend since 2008 (European Commission, 2016e, p. 9). Regarding “Access to finance” area, Lithuania performs within the EU average and it has been improving constantly since 2008 (European Commission, 2016e, p. 10).

As of “Single market” principle, Lithuania performs in line with the EU average and it has been constantly improving over time. Progress in this domain has been significant since 2008 (European Commission, 2016e, p. 11). On skills and innovation area, Lithuania scores under the EU average. Although many measures have been taken since 2008, they have not yet delivered sufficient results (European Commission, 2016e, p. 12).

Regarding “Environment” principle, Lithuania performs above EU average and also has a positive trend over the years. In recent years, considerable attention was given to this SBA policy area (European Commission, 2016e, p. 13). Concerning “Internationalisation” principle, Lithuania scores below EU average. Still, the long-term trend is slightly positive. Its score has dropped substantially compared to last year (European Commission, 2016e, p. 14).

1.4.7 Poland

With respect to “Think small first” principle, some progress has been made, but further improvement is needed (European Commission, 2016f, p. 6). Regarding “Entrepreneurship” principle, country performance was slightly below the EU average and there has been slightly deteriorating trend since 2008 (European Commission, 2016f, p. 7).

Regarding “Second chance” principle, Poland performs below the EU average. It was driven by the excessive time and cost taken to resolve insolvency and above-average fear of failure (European Commission, 2016f, p. 8). As of “Responsive administration” principle, the quality of service provided by Poland’s government authorities remains average, although this is the SBA area in which Poland made most progress since 2008 (European Commission, 2016f, p. 9).

Concerning “State aid and public procurement” principle, country performance continued to be average. The available data shows that Poland has been slowly making progress in this area since 2008 (European Commission, 2016f, p. 10). Regarding “Access to finance” principle, Poland continued to perform well in providing access to finance to SMEs, supported by EU funding (European Commission, 2016f, p. 11).

As of “Single market” principle, Poland performed poorly, despite the policy efforts made since 2008 (European Commission, 2016f, p. 12). Regarding “Skills and innovation” principle, Poland performs below the EU average. At the same time, it was the country’s worst performing SBA area (European Commission, 2016f, p. 13).

With respect to “Environment” principle, Poland performed in line with the EU average. Public support for both green products and resource-efficiency actions became more accessible (European Commission, 2016f, p. 14). Regarding “Internationalization” principle, Poland improved its performance and it is in line with the EU average (European Commission, 2016f, p. 15).

1.4.8 Romania

Regarding “Think small first” principle, government has taken various initiatives in the past years and progress has been made (European Commission, 2016g, p. 5). As of “Entrepreneurship” principle, Romania scores above the EU average (European Commission, 2016g, p. 6).

With respect to “Second chance” principle, Romania performs in line with the EU average. The biggest concern in this area is the time it takes to resolve insolvency procedures and it remains one of the longest in the EU (European Commission, 2016g, p. 7). Regarding “Responsive administration” area, Romania has improved since 2008 (European Commission, 2016g, p. 8). Concerning “State aid and public procurement” principle, Romania has significantly improved its performance and is now close to the EU average. However, there is still room for improvement, mainly over public tender participation (European Commission, 2016g, p. 9). With respect to “Access to finance” principle, Romania performs in line with EU average. SMEs are perceived as risky by banks due to the lack of collateral and their high share of non-performing loans (European Commission, 2016g, p. 10).

Regarding "Single market" principle, Romania scores below the EU average. Even though Romania has put in place many of the SBA recommendations, results show that there is still room for improvement, particularly in increasing the export performance (including online exports) of Romanian enterprises (European Commission, 2016g, p. 11). "Skills and innovation" principle presents the most problematic principle for Romania, which is one of the poorest performing countries in the EU in this area. Romania has included all the policy advice from the SBA recommendations in its agenda, but this has not yet yielded results (European Commission, 2016g, p. 12).

As of "Environment" principle, country score deteriorated compared to the preceding period and the country is now one of the poorest performing countries in the EU in this area (European Commission, 2016g, p. 13). Regarding "Internationalization" principle, Romania performs in line with the EU average (European Commission, 2016g, p. 14).

1.4.9 Slovakia

Considering "Think small first" principle, although legislation is tested to determine its impact on SMEs, they are not yet systematically included in consultations on future legislation. In addition, the regulatory framework and judicial system have not been sufficiently supportive to business activity (European Commission, 2016h, p. 5). Regarding "Entrepreneurship" principle, Slovakia performs in line with the EU average. Progress in policy implementation has been moderate since 2008 (European Commission, 2016h, p. 6).

Concerning "Second chance" principle, Slovakia performs below the EU average. This is due to its time-consuming and costly insolvency procedure, which is the lengthiest in the entire EU and the third most costly (European Commission, 2016h, p. 7). As of "Responsive administration" principle, Slovakia performs below the EU average and is among the three worst performing EU countries in this SBA area. The general administrative environment remains burdensome. Start-up conditions also need to improve (European Commission, 2016h, p. 5).

Regarding "State aid and public procurement" principle, Slovakia performs in line with the EU average. There has been no improvement in Slovakia's performance in this SBA area since 2008 (European Commission, 2016h, p. 9). With respect to "Access to finance" principle, Slovakia also performs in line with the EU average. Access to finance has improved, although not as fast as elsewhere in the EU (European Commission, 2016h, p. 10).

As of "Single market" principle, Slovakia performs in line with the EU average and it maintained its strong position on the implementation of single market legislation. What represents a problem is the unfair blockage of market access for new and growing firms by incumbents. Additionally, there are still far fewer Slovakian SMEs trading within the single market than in the EU overall (European Commission, 2016h, p. 11). Concerning "Skills

and innovation" principle, Slovakia scored below the EU average. Both the percentage of SMEs selling online and the share of e-commerce-generated turnover in SMEs' total turnover increased over the last year (European Commission, 2016h, p. 12).

Regarding "Environment" principle, Slovakia performs above the EU average (European Commission, 2016h, p. 13). With respect to "Internationalization" principle, Slovakia performs below the EU average. The main reason is the extra-EU trading performance of Slovakian SMEs (European Commission, 2016h, p. 14).

1.4.10 Slovenia

With respect to "Think small first" principle, the regulatory and administrative burden on SMEs remains too high, even though progress has been made over the past years (European Commission, 2016i, p. 5). Regarding "Entrepreneurship" principle, Slovenia performs below the EU average. However, media attention to entrepreneurship has increased, as people see more and more media stories about successful new businesses (European Commission, 2016i, p. 6).

Concerning "Second chance" principle, Slovenia performs within the EU average. Particularly positive results concern insolvency, which is resolved quicker than in all but one EU Member State, and this is achieved with relatively lower cost than in the rest of the EU. However, the liquidation proceedings remain lengthy and ineffective (European Commission, 2016i, p. 7) As of "Responsive administration" principle, Slovenia scores below the EU average. Time required to transfer property decreased significantly, but it is still more than twice as long as in the rest of the EU (European Commission, 2016i, p. 8)

Regarding "State aid and public procurement" principle, Slovenia performs in line with the EU average. A higher proportion of Slovenian SMEs participates in public tenders than in the rest of the EU (European Commission, 2016i, p. 9) Concerning "Access to finance" principle, Slovenia scores in line with the EU average. Both willingness of banks to lend money and access to public financial support including guarantees have improved, suggesting a trend of positive developments in this area (European Commission, 2016i, p. 10)

Regarding "Single market" principle, Slovenia performs within the EU average, but it still has the second highest number of single market directives not yet transposed into national legislation (European Commission, 2016i, p. 12). As of "Skills and innovation" principle, Slovenia performs in line with the EU average. The key measures to promote the upgrading of skills in SMEs have been adopted (European Commission, 2016i, p. 13). As of "Environment" principle, performance of Slovenia is broadly in line with the EU average (European Commission, 2016i, p. 14). Regarding "Internationalisation" principle, Slovenian SME's performance is on par with the EU average (European Commission, 2016i, p. 15).

2 LITERATURE REVIEW

This chapter conducts a literature review on the chosen variables and their connection to the SME performance by citing and presenting ideas of other papers, discussions and researches on the similar topics.

Empirical work on this subject includes Ipinnaiye, Dineen and Lenihan (2016). They analyzed the determinants of SME growth by using firm-level panel data combined with macroeconomic variables for the period 1991-2007 in Ireland. They developed a holistic multivariate model which not only relates SME performance to firm characteristics, but also considers multiple firm growth measures (employment, turnover and productivity). Findings show that macroeconomic environment influences SME growth directly and also that SME growth is driven by a combination of firm characteristics, firm strategy, and macroeconomic conditions. They also find evidence in support of smaller firms as important sources of employment and turnover growth. While my research paper also attempts to investigate determinants of SME performance, different empirical model will be used and will comprise more countries from a different Europe cluster (CEE). Also, more recent years will be included in the research.

Yeboah (2015) was motivated by the high failure rate of SMEs in Ghana and his study attempts to find out the consequences of the entrepreneur and firm characteristics on SME growth. Data was gathered from questionnaires and the Cramer's V statistical test was used as the analytical tool. Findings show that educational qualifications of the entrepreneur, followed closely by the gender of the entrepreneur and size of the enterprise, had the most significant influence on growth of SMEs. This study is more focused on the internal factors such as entrepreneurs' gender, education and motivation rather than the external country factors that I am attempting to research. Also, my research includes a cluster of countries, rather than just one particular country.

Rosly (2011) is researching determinants of SME performance in the Malaysian auto-parts industry using a multiple regression analysis. Performance indicators studied are turnover, market share and productivity as dependent variables, each with four independent variables: age, marketing, parts and foreign equity participation. Two variables (age and foreign equity participation) are significantly related to SME performance. This paper is focused on a single country and industry, while my paper will also research various types of industries in which SMEs operate in chosen CEE countries.

Ayyagari, Beck and Demirguc-Kunt (2003) in their paper include a variety of macro-economic variables (government consumption, inflation, education, trade, black market premium, private credit), historical determinants (latitude, good crops, settler mortality, ethnic fractionalization, religious composition, law) and business environment variables (cost of entry, bankruptcy, cost of contract enforcement, credit registry, labour market regulation, property rights, regulatory environment and institutional development). My

paper also takes into consideration different groups of variables, but not taking into account historical determinants. Also, my research is not based on a large number of countries, but on the chosen CEE countries.

After research of other papers with similar topics, I can conclude that the literature in the field is relatively sparse. I will therefore focus on a broader inspection of empirical research on relevant variables that are associated with my research question – determinants of SME performance in chosen CEE countries. Chosen variables are highlighted by other researchers dealing with the macroeconomic environment and the performance of SMEs. I am mostly following Ayyagari, Beck and Demirguc-Kunt (2003) for choice of relevant variables.

2.1 GDP

GDP is created because of business activity; it can be concluded that business affects GDP. However, because it is a macroeconomic indicator of the business strength, it is used by investors and businesses to determine efficient capital employment (Loveland, 2018).

European Central Bank reviews GDP in order to set interest rates. If the economy is contracting, interest rates are lowered in order to stimulate economic activity. Lower interest rates make cost of capital cheaper for businesses that decide to take on debt which is stimulating for the business growth (Loveland, 2018). Higher GDP predicts better sales which leads banks to increase their lending limits (Woodruff, 2019). If the economy is in the period of growth, interest rates are increased in order to control for inflation.

This change of GDP affects businesses in many ways. One of them is the way it affects sales and hence cash deployment strategy. If GDP declines, small business can expect decline in sales. Because of that, they may reduce inventory, lower prices, postpone decisions on expansion (Woodruff, 2019) and set aside more cash in the case of continuation of sales decline (Loveland, 2018). If GDP is rising, it gives businesses confidence. This raises investor confidence on things such as buying new equipment, building new plants, expanding operations and hiring new employees (Loveland, 2018). So, employment is also affected by GDP. If it is growing, more employees have to be hired to help manage growing business, while some employees may lose their jobs when GDP starts to fall.

However, not only employers and employees are affected by GDP. Investment decisions also partly depend on it. A higher GDP also means a higher purchasing power as members of a community have more to spend. This is connected to investment in the way that investing in businesses in areas with higher per capita ratios may mean that a higher return will be yielded. This is because it is assumed that, because of the higher income of the area, people have the purchasing power to buy services or products that the business is offering (Thibodeaux, 2019).

Businesses as well evaluate GDP of other countries in order to exploit capital investment opportunities and also to see if there is an opportunity to increase markets or to move operations. This means that when governments intervene into businesses and markets, it can be counterproductive as it may force businesses out of the country as a result of regulatory or other government policies. So, while government uses GDP numbers in their attempt to control the economy, businesses use them to make strategic business decisions (Loveland, 2018).

As Žvirblis identified, integrated transport companies' macro environment evaluation shows that, beside some other factors, GDP growth belongs to the most important factors (in Bekeris, 2007, p. 118). Contrary, the investigation of Bekeris di d not show a statistically significant correlation between the GDP growth and profitability. However, according to Bekeris, it can be stated that the GDP influence on the financial ratios studied is dependent as much as the profitability of companies depends on incomes, but it does not always go that way (Bekeris, 2012, p. 126). Still, there is a difference between using data before the crisis and using post-crisis data. Macro environment evaluation of the integrated transport companies' survey provides an evidence that before the global crisis of 2007 the correlation between GDP growth and profitability was statistically significant. But after the post-crisis data was integrated, the significance does not exist anymore (Bekeris, 2012, p. 126).

2.2 Government debt

Public debt is one of the main macroeconomic indicators, which forms a countries' image in international markets (Ribeiro, Vaicekauskas & Lakstutiene, 2012). It shows how much country owes to lenders, which include individuals, businessess and other governments (Amadeo, 2019). Relationship between public debt and growth is nonlinear, but at high levels, often at a debt/GDP ratio around 90% of GDP, public debt overhand does seem to have a negative effect on a growth (Reinhart, Reinhart & Rogoff, 2012, p. 80). This was a finding after studying of the relationship between high public debt, growth and inflation in 44 countries using a panel framework.

Mousa and Shawawreh (2017) investigate the impact of public debt on the GDP growth in Jordan during the period from 2000 to 2015. The study employs least squares method and regression model to capture the impact of public debt on economic growth. Results of the analysis indicate that there is a negative impact of total public debt, especially external debt on economic growth. Karagol (2002), who examined the relationship between economic growth and external debt service in Turkey for the period from 1956 to 1996 by using multivariate co-integration techniques, reached a similar conclusion. The study showed a negative relationship between external debt and economic growth in the long-run.

There are several consequences of growing debt. One of them is reduced public investment. This is because the government has to spend more of its budget on interest costs, which leaves less space for public investments in programs that build our future and improve

economic growth. Upward shift in interest rates calls for significant tax and spending adjustments, meaning increasing taxes and reducing public spending, which increases unemployment (Skidelsky, 2016).

Another consequence of growing debt is reduced private investment. Federal borrowing competes for funds in the nation's capital markets. This raises interest rates and leaves less space for new investments in business equipment and structures. This leads to higher cost of capital for entrepreneurs. Additionally, investors might demand even higher interest rates because of their doubt in the government's ability to repay debt. This again affects the cost of borrowing for businesses, reducing investment and eventually slowing down the growth of productivity and wages. Higher interest rates lead to fewer investments in research and development, hindering businesses from keeping pace with the market in terms of innovation. It also hurts wage growth (Peter G. Peterson Foundation, no date).

2.3 Government expenditure

There are two theories on relationship between government expansion and economic growth, bigger government and smaller government. Proponents of smaller government believe that the government is too big and if additional resources are transferred from the productive sector of economy to government, this would have negative effect on economic growth because the government would use those resources less efficiently. On the other hand, proponents of bigger government believe that increases in government spending positively affect economic growth as it puts money into pockets of citizens, but also that government programs provide better education and infrastructure. There is no conclusion in economic theory on impact of government outlays on economic performance. Government spending is needed for the successful operation of the rule of law, as developing infrastructure, protecting property and enforcing contracts (Mitchell, 2005).

However, even though there is no final answer to the question of how government expenditure affects economy, there is a persuasive consensus in academic literature and government spending seems to be associated with weaker economic performance (Mitchell, 2005). Example of such instance in academic literature is the following: "Growth in government stunts general economic growth. Regardless of how it is financed, an increase in government spending leads to slower economic growth" (Fu, Yucel & Taylor, 2003, p. 8). Also, another example is: "Taxes and government expenditures affect growth both directly and indirectly through investment. An increase of about one percentage point in the tax pressure, e.g. two-thirds of what was observed over the past decade in the Organisation for Economic Co-operation and Development sample, could be associated with a direct reduction of about 0.3 per cent in output per capita. If the investment effect is taken into account, the overall reduction would be about 0.6-0.7 per cent" (Bassanini & Scarpetta, 2002, p. 35).

2.4 Global Competitiveness Index

Global competitiveness index (hereinafter: GCI) is defined by the World Economic Forum. It is a set of institutions, policies and factors that determine the level of productivity of a country, conditions of public institutions and technical conditions. It is using accessible statistics data, which can be found at the sources like the World Bank and International Monetary Fund, but the World Economic Forum with the support of the partner institutions, such as business centers and research institutions makes the results of findings. GCI is useful because it identifies the priorities for the facilitation of political reforms implementation by considering strengths and weaknesses of each country taken into consideration. It considers factors that are significant in creating a favorable business environment and which boost competitiveness (Schwab, 2012).

A competitive economy should be the one, which is productive. Productivity is important because it leads to growth, which then leads to higher income levels, which are connected to human welfare and wellbeing. It is also considered as one of the main factors driving growth and income levels (Cann, 2016).

Competitiveness is important because countries that are more competitive offer greater returns on investment. National investments in areas like education, skills and infrastructure have more potential to translate into economic growth. It also implies that countries with higher competitiveness offer more economic stability and resilience, which helped countries back in 2007 to be less severely affected by the recession (Xavier, 2016).

Pillars are measured by the score from 0 to 7. Score between 5.45 and 7 means very high indicator, score between 4.51 and 5.44 means high indicator, score between 3.51 and 4.50 means middle indicator, score between 3.01 and 3.50 means low indicator and score between 0 and 3 means very low indicator (Schwab, 2012).

2.5 Corruption perceptions index

Corruption affects markets and competition, destroys government legality, causes mistrust amongst the citizenry of a country, erodes the rule of law and compromises the integrity of SMEs (Burger & Holland, 2006, p. 45). As Aterido, Hallward-Driemeier and Pagés (2009) present it, it is seen as one of the principal obstacles affecting SMEs development and also as an impediment to SMEs potential to provide employment. Also, corruption negatively affects the volume of investment and raises a firm's investment costs (Kallon, 2003; Jain, 2001).

De Rosa, Gooroochurn and Gorg (2010), find a significant negative relationship between corruption and productivity of a firm. Kanu (2015) finds a significant negative correlation between corruption and growth, which is in line with findings of Athanasouli, Goujard and Sklias (2012). At the same time, Kanu (2015) also finds a significant negative association

between corruption and productivity, which follows findings of De Rosa, Gooroochurn and Gorg (2010).

Corruption perceptions index (hereinafter: CPI) is a measure that rates countries based on their perceived level of corruption (Letki, 2013). If a score is closer to 100, it shows that the country is doing decent job at preventing public sector corruption. It the country scores below 50, it means that it has a serious problem regarding corruption, while if it scores below 30 it means that corruption is systematic and systemic in that country (Hough, 2018).

Results of the CPI survey show that countries that score the lowest are consistently poor countries and that countries that score the highest are consistently rich countries. These results lead to conclusion that corruption represents one of the key obstacles to sustainable development (Letki, 2013).

2.6 Unemployment rate

A high level of unemployment may not always have only bad implications. For example, high unemployment can mean that the market has a lot of free labor. This contributes to the high supply and better prices of the working power. On the other hand, when looking at the macroeconomic level, there are several consequences of high level of unemployment. One of them is that the government collects less personal income tax for its budget, while having increasing number of unemployed people who need the money, so less of it is left to spend on many different investment programs (Bekeris, 2012, p. 123).

In the research of Bekeris (2012), unemployment had the biggest impact on profitability. The correlation is negative which means that high unemployment rate has negative effects, i.e. reduces the profitability of firms. The hypothesis that a high unemployment rate helps small businesses to find easier skilled labour at a reasonable price and improve their financial performance is wrong, because the correlation is not positive (Bekeris, 2012, p. 125).

Unemployment has several effects on the business. First of all, it weakens consumer buying, because when people are out of work, they have less money to spend, which means that their purchasing power, the driver of local economies, is weakened. Secondly, it raises unemployment taxes, which means that small businesses may pay higher federal unemployment taxes (Bolden – Barett, 2018). Also, both state and federal governments pay increased unemployment benefits. These amounts are considerable. "Even in February of 2017, with the unemployment rate hovering around 5 percent, unemployment benefits that include food benefits and Medicaid totaled $2.96 billion for the month" (Gleeson, 2019). Additional problem represents the fact that, in order to pay for the unemployment benefits, the government borrows money, which defers the costs into the future and it reduces the amount available to spend in other areas (Gleeson, 2019).

There is also a theory that unemployment encourages entrepreneurship, because labor departments around the world encourage laid-off workers to start their own business. They offer them entrepreneurial workshops, information on obtaining a loan and starting a business, and they also pay potential workers that are setting up their business stipends instead of unemployment benefits (Bolden – Barett, 2018).

2.7 Inflation rate

Inflation has many effects on businesses. The first one is consumer purchasing which affects business revenues. If workers in company expect all prices to rise, they demand higher salaries. Employer then increases the prices of the goods or services it sells in order to keep up with these prices. This leads to the fact that companies that purchase those goods or services then have to increase price of their services, which continues the cycle of rising prices (Rodeck, 2017). This also as a consequence has tighter profits, because if the business has to pay more for goods and services, they will likely eat into its profit.

Another type of costs caused by inflation are known as "menu costs". They are called this way because if the prices continue changing, businesses have to continue printing new menus or changing price tags to list the correct prices. If businesses cannot predict the prices properly because of the inflation, then these printing and reprinting costs add up (McMahon, 2017).

Another consequence is uncertainty and confusion. Costs of investing would keep changing frequently, which makes investors less willing to invest as they cannot be certain over future demand, wages and costs. This can be one of the biggest problems for companies, because higher uncertainty brings lower growth (Pettinger, 2016).

When there is inflation, there is also an increased pressure to retain employees, because they need higher salaries. If the business is not able to provide them, employees will then look for job with other, larger employers that they expect to be able to provide higher salaries. Smaller businesses should look for other ways to boost employee retention, such as extra time off or more flexibles schedules. Those are things that would make employees more satisfied but that do not cost much at the same time.

However, inflation is not always necessarily bad for everybody. It can hurt some businesses but, at the same time, it can boost profitability in others. For example, inflation in real estate increases the prices of homes. Increase in demand is met by a stagnant housing inventory, which is great for real estate agents who now can earn commissions on higher sale prices (Uzialko, 2018). Another example is the fact that inflation decreases debt values. It decreases the value of the dollar, so it also decreases the value of fixed debt denominated in dollars. Lenders do not have the same flexibility as companies that can increase their prices. While this is advantageous for companies that have a lot of debt, as their loans can be paid out at

the cheaper price, at the same time it is disastrous for companies that have made these loans, banks especially (Rodeck, 2017).

Larger companies are in a better position to bear the burden of inflation, because they can offset it by savings, which are generated because of economies of scale. This is not the case with the smaller firms who get directly hit on the margin (Burn-Callander, 2015).

In the long term, a low inflationary environment may facilitate higher investment and growing demand, which improves profits as a result (Pettinger, 2016).

2.8 Bank Return on Assets (before tax)

This variable is one of the financial sector development indicators. In choosing financial sector indicators I was following Snapshot of select data to be utilized for Financial Sector Development Indicator project, related to banking (The World Bank - financial sector operations and policy, no date). This comprehensive assessment through enhanced information capacity was motivated by the fact that the world is becoming more and more integrated and shocks transmit swiftly across borders. Because of that, the need for comprehensive financial risk assessment data has become all the more imperative. Another motivator was lack of benchmarking in the previous data collections. There were data collections in one or a few selected dimensions, which did not allow benchmarking countries in the multiple dimensions of financial sector development. There was also lack of proper definitions, lack of comprehensive information and lack of a single focal point. The data were scattered, not easily accessible, and lacked comparability (The World Bank - financial sector operations and policy, no date).

Return on assets (hereinafter: ROA) is an indicator of how profitable your company is relative to its total assets. It tells what earnings were generated from invested capital (Hargrave, 2019). It is not a perfect measure, but it is the most effective, broadly available financial measure to assess company performance, which is in this case bank performance. It takes into consideration both, income statement performance and the assets required to run a business. It is more useful compared to other measures, such as return on equity or return to shareholders, because of it sensitivity to debt leverage. Also, ROA is more certain because it is not sensitive to short-term gaming that can occur. The reason for this is the fact that assets such as property, plant and equipment and also intangible assets include long-term asset decisions that are more difficult to tamper with in the short term (Hagel, Brown, Samoylova and Lui, 2013).

The ROA figure gives investors an idea of how effective the company is in converting the money it invests into net income. The higher the ROA number, the better, because the company is earning more money on less investment (Hargrave, 2019).

High ROA describes a healthy bank system and banks are important for SME development. One of the most important facts is that they provide financing for businesses to start, sustain, or expand. There are many SME business loans designed to help SMEs start. They also promote entrepreneurship. The role of private sector is crucial in accelerating the pace of economic growth, and banks increase its participation in economic development by offering loans that are easily accessible at a low rate of interest. The expansion of financial sector encourages entrepreneurs to make investments by promoting entrepreneurship (Sanderson, 2013).

2.9 Bank Deposits to GDP

This financial sector development indicator evaluates the value of bank deposits with respect to the economy of the country (Lakstutiene, 2008, p. 10). As explained for the previous vaiable, for economic development is important that financial sector is developed and that banks are stable and healthy, which leads to SME development. This indicator is one of the indicators that prove it.

2.10 Regulatory Capital to Risk Weighted assets

Risk-weighted assets are used to determine the minimum amount of capital that must be held by banks and other institutions to reduce the risk of insolvency. The capital requirement is based on a risk assessment for each type of bank asset (Tuovila, 2018).

Regulatory capital, or capital adequacy needs to address the worst of eventual loss and potential mark to market loss. Since mark to market loss is almost always worse than enetual loss risk, that has to be the key focus (Tchir, 2012). This financial sector development indicator is important for the same reason as the previous two. It shows the bank stability which promotes SME development and stability.

2.11 ATMs per 100,000 Adults

In advanced countries, the large amount of population has access to financial services, while this is not the case in the developing countries. The access to financial service is a lot more limited. This has a negative effect on the economic growth and development. Because of this reason, in developing countries every ATM is important.

According to the International Monetary Fund's new Financial Access Survey, high-income countries had an average of 85 ATMs and 45 bank branches per 100,000 adults since 2009. In comparison, low-income countries had an average of just 3 ATMs and 6 bank branches per 100,000 adults. The gap is still large, but developing countries make a steady and strong progress. In low-income countries, the average number of bank branches per 100,000 adults increased by about 45 percent between 2004 and 2009. Over the same period, bank branches

in advanced economies experienced minimal growth. Furthermore, the average number of ATMs per 100,000 adults in low-income countries grew sevenfold between 2004 and 2009, whereas in high-income countries the number increased by about 28 percent during this period (Oshima & Chan, 2011).

Access to financial services remains a challenge of modern times and urban populations continue to benefit from far broader access to finance than rural communities. In China around 200 million rural adults remain outside the formal financial system (Demirguc-Kunt, Klapper, Singer, Ansar & Hess, 2017, p. xii).

2.12 Paying Taxes - Total Tax Rate (% of profit)

This is one of the indicators from doing business database. This measure records the taxes and mandatory contributions that a medium-size company must pay or withhold in a given year, as well as measures the administrative burden in paying taxes and contributions. Taxes and contributions measured include the profit or corporate income tax, social contributions and labor taxes paid by the employer, property taxes, property transfer taxes, dividend tax, capital gains tax, financial transactions tax, waste collection taxes, vehicle and road taxes, and any other small taxes or fees (Doing business, 2018). Doing business has a special method of measuring taxes, which goes beyond the traditional definition of a tax. As defined for the purposes of government national accounts, taxes include only compulsory, unrequited payments to general government. Doing Business departs from this definition because it measures imposed charges that affect business accounts, not government accounts. It measures all taxes and contributions that are government mandated (at any level, federal, state or local) and that apply to the standardized business and have an impact in its financial statements (Doing business, 2018).

Importance of taxes can be seen from the fact that "10 percentage point increase in the first year effective corporate tax rate reduces the aggregate investment to GDP ratio by about 2 percentage points (mean is 21%), and the official entry rate by 1.4 percentage points (mean is 8%)" (Djankov, Ganser, McLiesh, Ramalho & Shleifer, 2010, p. 35). They also find that economies with simple, well-designed tax systems are able to help the growth of businesses and the growth of overall investment and employment. Keeping tax rates at a reasonable level can encourage the development of the private sector and the formalization of businesses. This is particularly important for SMEs, which contribute to growth and job creation but do not add significantly to tax revenue.

Tee, Boadi and Opoku (2016) research the perception of managers and executive officers of the tax system in Ghana on the profitability of their businesses by surveying of 102 managers or executive officers of the selected SMEs in the Ga West Municipality in the Greater Accra region of Ghana. Research conclusion states that the increase in tax rates leads to higher production, distribution and selling costs, which lead to higher prices. This consequently leads to customers buying less of the product, decrease in sales volumes, reduced

profitability and slow growth of SMEs. In addition, tax payment is among the outflows of cash from the business, which reduces the purchasing power of an enterprise.

2.13 Starting a Business - Distance to Frontier

This topic measures the paid-in minimum capital requirement, number of procedures, time and cost for a small to medium-sized limited liability company to start up and formally operate in economy's largest business city (Doing Business, 2018a). The DTF score helps assess the absolute level of regulatory performance over time. It measures the distance of each economy to the "frontier," which represents the best performance observed on each of the indicators across all economies in the Doing Business sample since 2005. One can see both, the gap between a particular economy performance and the best performance at any point in time and assess the absolute change in the economy's regulatory environment over time as measured by Doing Business. Economy's DTF is reflected on a scale from 0 to 100, where 0 represents the lowest performance and 100 represents the frontier (Doing Business, 2018a).

This measure is important because large part of regulations and administrative procedures for starting a business are found to be associated with a smaller number of legally registered firms, greater informality, smaller tax base and more corruption opportunities (Audretsch, Keilbach & Lehmann, 2006). Using data collected from company registries in 100 economies over 8 years, analysis found that a simple business start-up process is critical for fostering formal entrepreneurship (Klapper, Lewin & Quesada, 2009). Simplifying registration requirements can range from merging registration procedures to eliminating redundant processes (Doing Business, 2018a). In Mexico, a reform which simplified business registration in different municipalities at different points in time, increased the number of registered businesses by 5% and employment by 2.8% (Bruhn, 2008). Fritsch and Noseleit (2013) explored the links between business entry regulation and social and economic outcomes and the results show that where formal entrepreneurship is higher, job creation and economic growth also tend to be higher.

2.14 Registering Property - Distance to Frontier

This measure examines the steps, time and cost involved in registering property, assuming a standardized case of an entrepreneur who wants to purchase land and a building that is already registered and free of title dispute. In addition, the topic also measures the quality of the land administration system in each economy (Doing business, 2018b). Doing Business records the full sequence of procedures necessary for a business to purchase a property from another business and to transfer the property title to the buyer's name, so that the buyer can use the property for expanding its business, as collateral in taking new loans or selling the property to another business (Doing Business, 2018b).

This variable is important as registered property rights are necessary to support investment, productivity and growth (Deininger, 2003). It was found that reforms significantly reduced the threat of reallocation or expropriation, thus facilitating more efficient land use, either through investment or by transferring land from less to more efficient uses and users. This resulted in higher shares of agricultural and construction land being used for arable and economic purposes (Deininger,Songqing, Shouying, Ting & Fang, 2015).

Christiansen, Schindler and Tressel (2009) present evidence that variation in the quality of property rights helps explain the heterogeneity of the effectiveness of financial and trade reforms in developing countries. The evidence suggests that sufficiently developed property rights are a precondition for reaping the the growth benefits of reforms. Giavazzi and Tabellini (2005) and Tressel and Detragiache (2008) show that the effectiveness of economic reforms may depend on the broad institutional environment, in particular on political institutions and the protection of property rights. Acemoglu and Johnson (2005) also show that the quality of property rights may constrain the effects of economic reforms. Johnson, McMillan and Woodruff (2002) find that weak property rights discourage firms from reinvesting their profits, even when bank loans are available. If property rights are relatively weak, entrepreneurs do not want to invest from retained earnings, but if they are relatively strong, firms reinvest their profits.

DTF is measured in the same way as in the previous variable (starting a business).

2.15 Resolving Insolvency - Recovery Rate (Cents on the Dollar)

Doing Business studies the time, cost and outcome of insolvency proceedings involving domestic legal entities. These variables are used to calculate the recovery rate, which is recorded as cents on the dollar recovered by secured creditors through reorganization, liquidation or debt enforcement (foreclosure or receivership) proceedings. To determine the present value of the amount recovered by creditors, Doing Business uses the lending rates from the International Monetary Fund, supplemented with data from central banks and the Economist Intelligence Unit (Doing Business, 2018c).

An advantage of a good insolvency regime is that it should prevent premature liquidation of sustainable businesses. Another advantage is that it should also discourage lenders from issuing high-risk loans as well as discourage managers and shareholders from taking inconsiderate loans and making other imprudent financial decisions (Djankov, Hart, McLiesh & Shleifer, 2008).

Economy-specific research has shown that both the liquidation of profitable businesses and failure rates among small and medium-size enterprises are reduced by insolvency reforms that encourage debt restructuring and reorganization. Bankruptcies among small and medium-size enterprises fell by 8.4% after Belgium introduced a new bankruptcy law in 1997 that encouraged corporate rehabilitation rather than liquidation (Dewaelheyns & Van

Hulle, 2006). In Colombia, bankruptcy reform made reorganization an attractive option for distressed but viable firms by reducing its costs, although this mainly benefited larger firms. About 40% of firms filing for reorganization under the old bankruptcy law underwent liquidation, while only about 26% did so under the new law (Gine & Love, 2006). In the case of Italy, evidence shows that the reorganization procedure introduction increased the interest rates on loan financing. The reform that accelerated the liquidation procedure not only decreased firms' cost of finance but also relaxed credit constraints (Rodano, Serrano-Velarde & Tarantino, 2011).

The recovery rate is recorded as cents on the dollar recovered by secured creditors through judicial reorganization, liquidation or debt enforcement (foreclosure or receivership) proceedings (Doing Business, 2018c).

3 DATA AND METHODOLOGY

In this chapter, I will first discuss the model used in the regression. After that, I will discuss the variables intended for use in the regression. I will then graphically present variables and their movement throughout the observed time period.

3.1 The model

In this part of the research paper, I will discuss the model used in the regression and compare it with other empirical work on the subject, such as Ayyagari, Beck and Demirguc-Kunt (2003), Rosly (2011), Ipinnaiye, Dineen and Lenihan (2016) and Yeboah (2015).

I apply the ordinary least squares (hereinafter: OLS), fixed effects (hereinafter: FE) and random effects (hereinafter: RE) models.

OLS model is one of the most often used techniques to analyze data and forms the basis of many other techniques, for example ANOVA and the generalized linear models. The technique may be applied to single or multiple explanatory variables.

The relationship between a continuous response variable (Y) and a continuous explanatory variable (X) may be represented using a line of best-fit, where Y is predicted, at least to some extent, by X. If this relationship is linear, it may be appropriately represented mathematically using the straight-line equation:

$$Y = \alpha + \beta X \tag{1}$$

The regression coefficient β describes the change in Y that is associated with a unit change in X (Hutcheson & Moutinho, 2011, p. 224).

The OLS regression model does not have to have only one explanatory variable. It can be extended to include multiple explanatory variables by adding additional variables to the equation. The form of the model is the same as above with a single response variable (Y), but this time Y is predicted by multiple explanatory variables (X_1 to X_3) which is shown by the following equation:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \quad (2)$$

Each β parameter indicates the average change in Y that is associated with the unit change in X, whilst controlling for the other explanatory variables in the model (Hutcheson & Moutinho, 2011, p. 226).

One of the limitations of the OLS model lies in its assumption for appropriate F-tests when using OLS in repeated measures data. It is that there is a constant correlation among multiple measurements within a subject. This assumption would not be true if measurements taken closer in time were more highly correlated than those taken farther apart in time. This type of correlation structure is likely in situations involving human performance. Thus, the assumption of constant correlation for measurements within a subject may not be true in many cases (Ugrinowitsch, Fellingham & Ricard, 2004).

Also, another limitation is in the assumption that the explanatory variables are uncorrelated with error term. This assumption requires that the observed values of the independent variables be determined independently of the error term.

The fixed effects model allows the unobservable individual effects to be correlated with the included variables. If the individual effects are strictly uncorrelated with the regression, then it might be appropriate to model the individual specific constant terms as randomly distributed across cross-sectional units (Greene, 2002, p. 293).

Other empirical work on this subject include Ayyagari, Beck and Demirguc-Kunt (2003). Their paper introduces a new database that allows researchers to examine the justification for promoting SME development. It also provides comprehensive statistics on the contribution of the SME sector to total employment and GDP across a broad spectrum of countries and it allows for a comparison on how the economic importance of the SME sector varies across countries. It also enables researchers to compare the extent of SME activity of a specific country with that of other countries in the same geographical region or countries with similar income levels and as well provides statistics on the contribution of the SME sector to the formal economy as well as the share of the informal economy.

The dataset shows a significant variation in the size and economic activity of the SME sector across income groups. Countries with a higher level of GDP have larger SME sectors in terms of their contribution to total employment and GDP. It is also interesting to note that the overall contribution of small firms, formal and informal, remain almost the same across

income groups. As income increases, the share of the informal sector decreases and that of the formal SME sector increases.

The paper also suggests that a variety of macro-economic variables (government consumption, inflation, education, trade, black market premium, private credit) and historical determinants (latitude, good crops, settler mortality, ethnic fractionalization, religious composition, law) show significant correlations with the relative importance of the SME and informal sectors.

Also, correlations between the importance of SME and informal sectors and various growth obstacles are examined. Obstacles include: financing, infrastructure, political instability, inflation, exchange rate, street crime, organized crime, taxes and regulation, corruption, judiciary obstacle and anticompetitive practices. Only the financing and inflation obstacles are negatively and robustly correlated with both SME measures. The importance of the informal sector, on the other hand, is positively correlated with most of the growth obstacles. This shows that in countries where there are many obstacles to firm growth and particularly for SMEs, firms tend to migrate to the informal sector to overcome these obstacles. These correlations also underline the importance of access to financial services for a thriving SME sector.

Business environment is also considered by using variables such as cost of entry, bankruptcy, cost of contract enforcement, credit registry, labour market regulation, property rights, regulatory environment and institutional development. Strong positive correlations are found between the SME variables and the institutional variables, suggesting that the SMEs thrive more in countries with better developed institutions. The correlation matrix also shows a negative relation between entry regulation and the importance of the SME sector, indicating that high entry regulation in terms of greater number of procedures and higher cost and time act as a deterrent to SME sector's development.

This paper considers wide variety of variables and a large number of countries, while my paper is focused on chosen CEE countries. Also, my paper takes into consideration different groups of variables, but does not consider historical determinants.

As mentioned previously in the literature review, Rosly (2011) is researching determinants of small and medium enterprises performance in the Malaysian auto-parts industry using a multiple regression analysis, which is also used in my paper. Other empirical works on SME performance which use different models include Ipinnaiye, Dineen and Lenihan (2016) and Yeboah (2015). Ipinnaiye, Dineen and Lenihan (2016) analyzed the determinants of SME growth by using firm-level panel data combined with macroeconomic variables for the period between 1991 and 2007 in Ireland. They developed a holistic multivariate model which not only relates SME performance to firm characteristics, but also considers multiple firm growth measures. Yeboah (2015) was motivated by the high failure rate of SMEs in Ghana and his study attempts to find out the consequences of the entrepreneur and firm

characteristics on SME growth. Data was gathered from questionnaires and the Cramer's V statistical test was used as analytical tool.

Importance of research of SMEs performances and determinants of their success is also stressed by Small and Medium Enterprises Development Authority (hereinafter: SEMEDA) for Pakistan. It is said that the role of SMEs will be the most important in achieving the Pakistan vision 2025, which is a long-term plan for sustainable economic growth, leading to employment generation and increase in national income (The Express Tribune, 2014). Enabling environment should be built by changing the policy and regulatory framework while reducing the overall cost of doing business in Pakistan (The Express Tribune, 2014), which is also examined in this paper for the chosen CEE countries. SME development organisations are now addressing the problem by setting up common facility centres and carrying out sector-specific studies (The Express Tribune, 2014). This is as well considered in the paper as SMEs in chosen CEE countries are divided in different sectors by their activities.

3.2 Choice of variables

Taking into account SME importance to the economy of the countries in which they operate, it is crucial to understand which country indicators affect SME performance. The main purpose of the thesis is to research and measure the determinants of the SME performance in the selected Central and Eastern Europe countries. For the purpose of this thesis, regression analysis in Stata will be conducted to test several research questions. It will be used to measure relation between different indicators and SME performance.

In this part of research paper, I will discuss the variables intended for use in the regression.

3.2.1 Dependent variable

For countries of interest in this thesis (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia) I used use secondary data that is publicly available, being Eurostat database "Annual enterprise statistics for special aggregates of activities" as the source of information on the SME turnover (Eurostat, no date). This database belongs to main indicators of structural business statistics databases. For economic indicator for structural business statistics, I chose the "turnover or gross premium written as a category" option. SME turnover relative to GDP will serve as the dependent variable in this thesis.

Regarding the observation period, the last year available in this database is 2015, and the first year with comparable data is 2008 so this period between 2008 and 2015 will be used for the analysis. However, there are some issues with this choice. The time period starts in 2008 which is the period of the financial crisis. Part of the observation period (the beginning

of the observation period) will be affected by it. Also, the period of eight years is short. These two constraints should be considered when interpreting the results.

The main variables within structural business indicators (hereinafter: SBI) are generally collected and presented in monetary units, or as count data (for example, numbers of enterprises or persons employed). SBI cover the "business economy", which includes industry, construction and distributive trades and services, but it does not cover agriculture, forestry and fishing, nor public administration and (largely) non-market services such as education and health.

SMEs are classified according to their economic activities in this Eurostat database. The full list of the used business categories is shown in the Appendix 2.

3.2.2 Independent variables

For independent variables, three groups of variables will be used. The first one is comprised of macroeconomic indicators, such as GDP, government debt, government expenditure, unemployment rate and inflation rate. The second group contains indicators of financial development, such as bank deposits to GDP, ATMs per 100,000 adults, regulatory capital to risk-weighted assets and bank return on assets (before tax). The third group are indicators taken from the doing business data. They are: starting a business - DTF, paying taxes - total tax rate (% of profit), registering property - DTF and resolving insolvency - recovery rate (cents on the dollar). Also, global competitiveness index and corruption perceptions index will be used as variables. As an additional factor, Transitional indicators assessed by EBRD will be considered. Assessments are made in six areas: large scale privatization, small scale privatization, governance and enterprise restructuring, price liberalization, trade and foreign exchange system and competition policy.

The list of variables intended for use is listed in the Appendix 3.

Also, three sets of dummy variables are included in the regression: time, country and industry dummy variable.

What must be mentioned is that there could be bias in this research as a consequence of reverse causality or simultaneity regarding SME turnover affecting GDP and GDP affecting SME turnover. SMEs increase employment, which leads to increased social standards. It also leads to increased production and innovation development. The business expands contributing to a reduction of imports and increasing exports and domestic production. The business expansion leads to increased investment. Employment growth leads to improved social standards. The consumption increases, contributing to the growth of national income. But Albania, for example, shows different results. Research paper (Myslimi & Kacani, 2016) was looking at impact of SMEs affecting economic growth in Albania. The observation period is between 1995 and 2015. The dependent variable is real GDP and the independent

variables are number of micro enterprises, number of small enterprises, number of medium enterprises and number of large enterprises. The results show that the enterprises that affect the economic growth in Albania are not SMEs, but large and micro enterprises, with large enterprises having greater impact than micro enterprises. Still, the potential bias arising from possibility of SME turnover affecting GDP has to be taken into account when interpreting the results.

Now I will graphically present all the used variables in the regression and their movement throughout the observed time period. It is important to see how the variables have changed during this period as it is affecting the regression results.

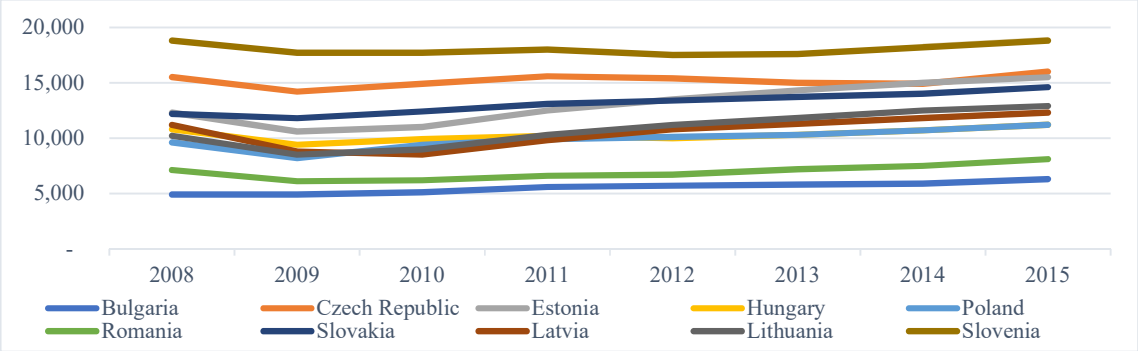
3.2.2.1 GDP

According to literature review (Loveland, 2018, Woodruff, 2019, Thibodeaux, 2019), a positive relationship is expected between GDP growth and SME performance, but because we are using post-crisis data, the relationship is not expected to be significant (Bekeris, 2012, p. 126).

GDP per country is graphically presented in Figure 1.

From the graph in Figure 1, we can tell that Bulgaria and Romania had the lowest GDP during the observed period, compared to other countries, which was slightly increasing towards 2015. All countries have the highest GDP in 2015, except Slovenia that has the same GDP in 2008 and 2015, expressed in millions of euros. Nevertheless, Slovenia has the highest GDP during the complete observed period compared to other countries. Each country experienced a fall in GDP in 2009, except Bulgaria, whose GDP stayed the same in 2008 and 2009. Latvia and Lithuania had a very similar path in GDP movement, which can be clearly seen in the Figure 1.

Figure 1: GDP per country



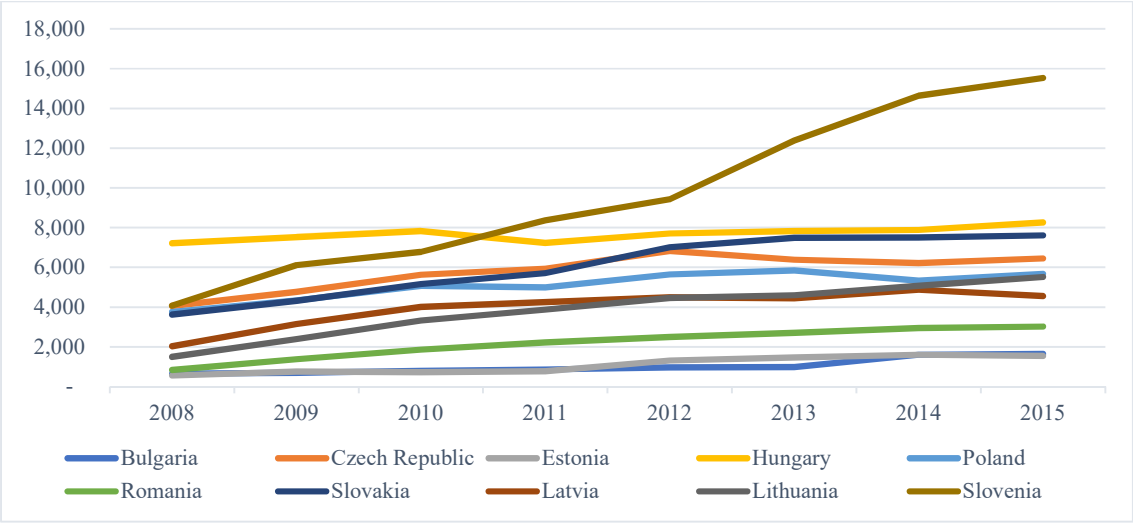
Source: Country Economy (no date).

3.2.2.2 Government debt

Government debt per for the countries in the sample is graphically presented in Figure 2.

From the Figure 2 we can see that Bulgaria and Estonia have the lowest government debt and that it is very similar in amounts. Slovenia has the greatest growth in government debt in the period since 2008 from 2015, with the amount in 2015 being almost four times bigger than the amount in 2008. All of the ten countries had the lowest amount of government debt in 2008.

Figure 2: Government debt



Source: Country Economy (no date).

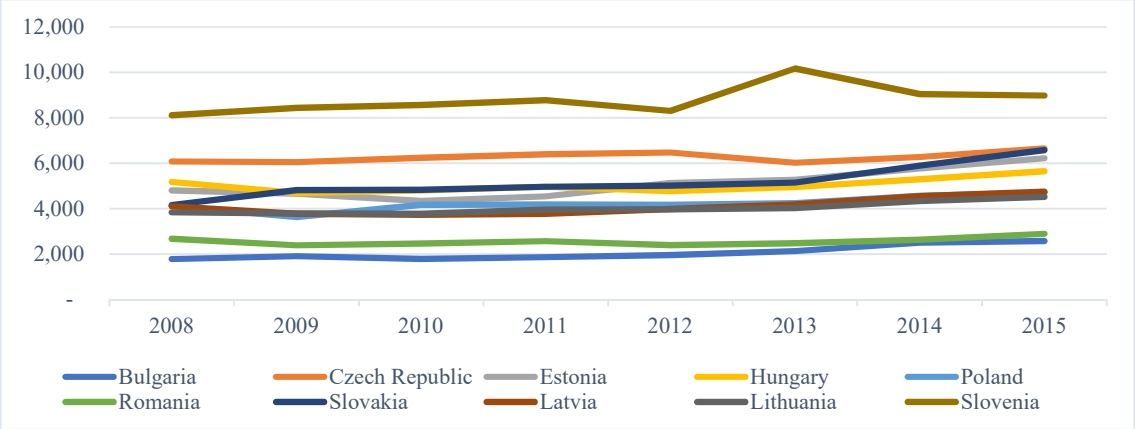
According to the literature review (Skidelsky, 2016; Peter G. Peterson Foundation, no date) negative relationship is expected between SME performance and growing government debt.

3.2.2.3 Government Expenditure

Government expenditure per country is graphically presented in Figure 3.

As we can see from figure 3, Bulgaria and Romania have the lowest amount of government expenditure, and their changes over the period between 2008 and 2015 are similar, which can be seen from the graph. Slovenia has the highest amount of government expenditure, followed by Czech Republic. Also, Slovenia had the biggest rise in government expenditure in 2013. None of the other countries had this sharp rise, even though Slovakia has a rising trend between 2013 and 2015.

Figure 3: Government expenditure



Source: Country economy (no date).

Literature review gives mixed opinions if government expenditure has positive or negative effect on economy, but the latest findings (Mitchell, 2005; Fu, Yucel & Taylor, 2003; Bassanini & Scarpetta, 2002) predict that it has negative effect, so negative effect on SME performance is also expected.

3.2.2.4 Global Competitiveness Index

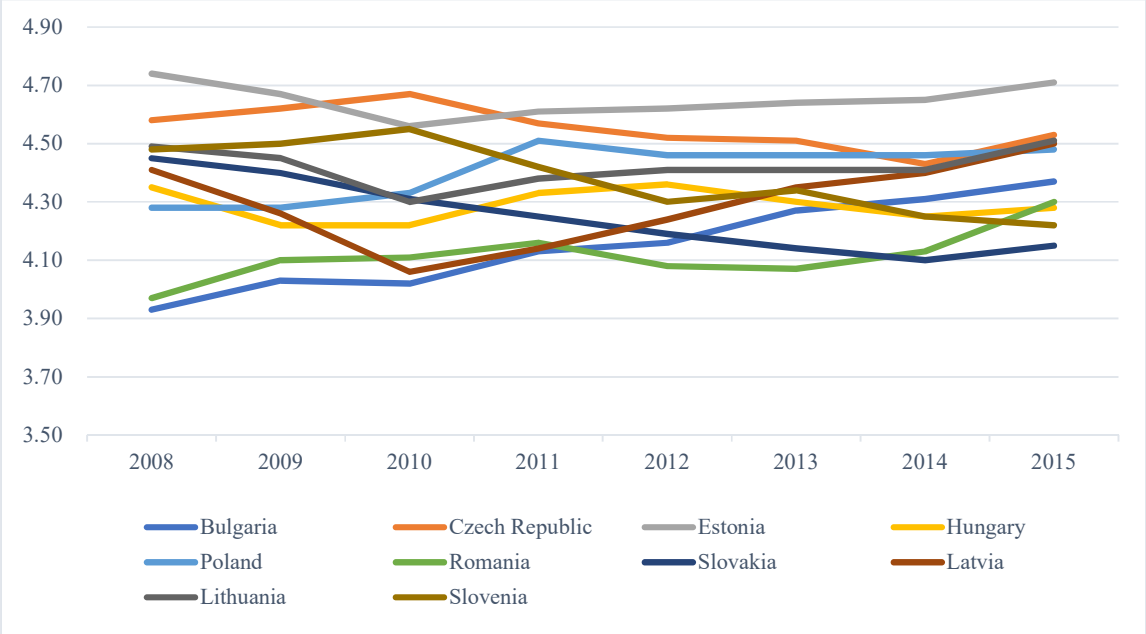
Global competitiveness index per country is graphically presented in Figure 4.

Competitiveness is important because countries that are more competitive offer greater returns on investment. It also implies that countries with higher competitiveness offer more economic stability and resilience, which helped countries back in 2007 to be less severely affected by the recession (Xavier, 2016).

Bulgaria is an example of a country that has improved it competitiveness throughout the considered period, from 3.93 in 2008 to 4.37 in 2015. Also, Romania improved its competitiveness from 3.97 in 2008 to 4.30 in 2015. These two countries have improved the most in the considered period. Slovakia and Slovenia have decreased in competitiveness, although not significantly. Slovakia decreased from 4.45 in 2008 to 4.15 in 2015 and Slovenia from 4.48 in 2008 to 4.22 in 2015. Poland increased in competitiveness, although also not significantly from 4.28 in 2008 to 4.48 in 2015. The rest of the countries remained constant in the considered period.

Mostly measured GCIs for chosen countries belong to middle or high indicators, which implicates that countries are competitive, which should have positive impact on SMEs. There are no very high indicators, but there are also no low or very low indicators, which could have negative effect on SMEs.

Figure 4: Global competitiveness index



Source: Country Economy (no date).

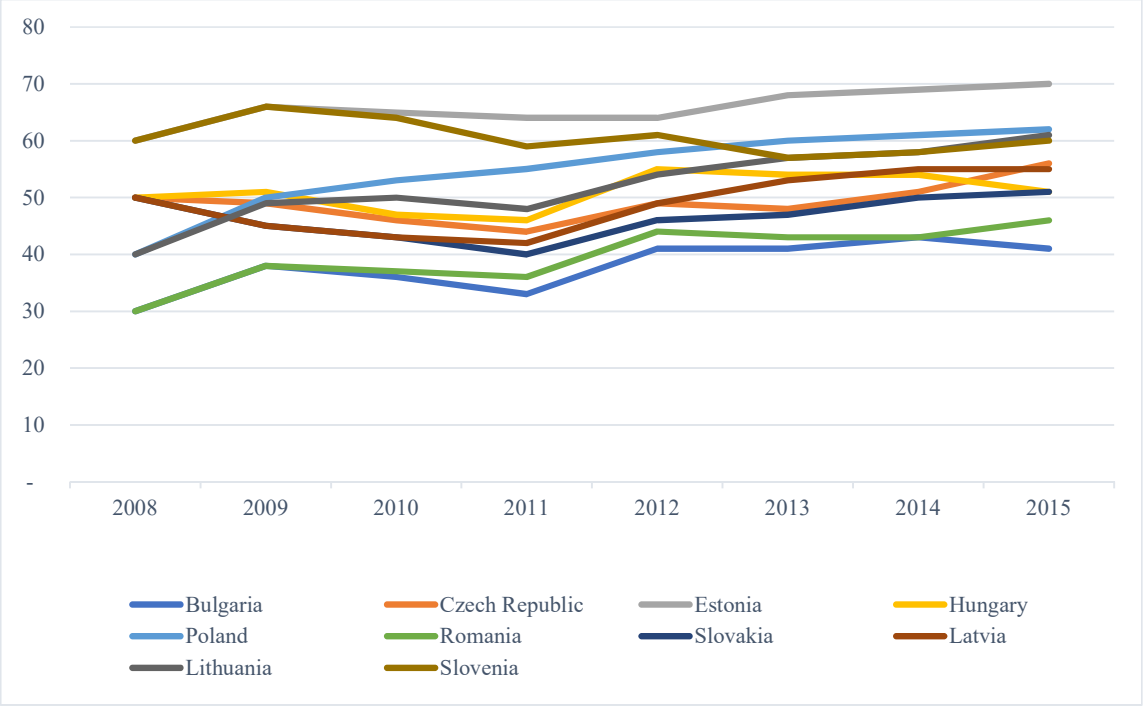
According to the literature review (Schwab, 2012; Xavier, 2016; Cann, 2016), a high GCI is expected to have a positive effect on the SME performance.

3.2.2.5 Corruption Perceptions Index

Corruption Perceptions Index per country is graphically presented in Figure 5.

As we can see from the graph, all countries improved their scores in the considered period, except Slovenia who had the same result equal to 60 in 2008 and 2015. The slightest improvement was shown by Slovakia and Hungary, who improved by one point comparing 2008 and 2015, but still scoring above 50, meaning they do not have serious corruption problems. The highest improvement was shown by Poland, which increased its result in 2015 compared to 2008 by 22 points, moving from score 40 to score 62, meaning that it moved from score under 50 (having serious problem with corruption) to score above 50 (not having it). It is closely followed by Lithuania, which increased for 21 points, also moving from score blow 50 (40) to score above 50 (61). Romania showed improvement by 16 points and Bulgaria by 11 meaning they still score below 50, i.e. have serious corruption problems. Estonia improved by 10 points, Latvia improved by 5 points, and Czech Republic by 6, remaining in the scores above 50, i.e. not having serious corruption problems.

Figure 5: Corruption perceptions index



Source: Country Economy (no date).

According to literature review (Hough, 2018; Letki, 2013), high levels of CPI should show positive effect on SME performance.

3.2.2.6 Unemployment Rate

Unemployment rate per country is graphically presented in Figure 6.

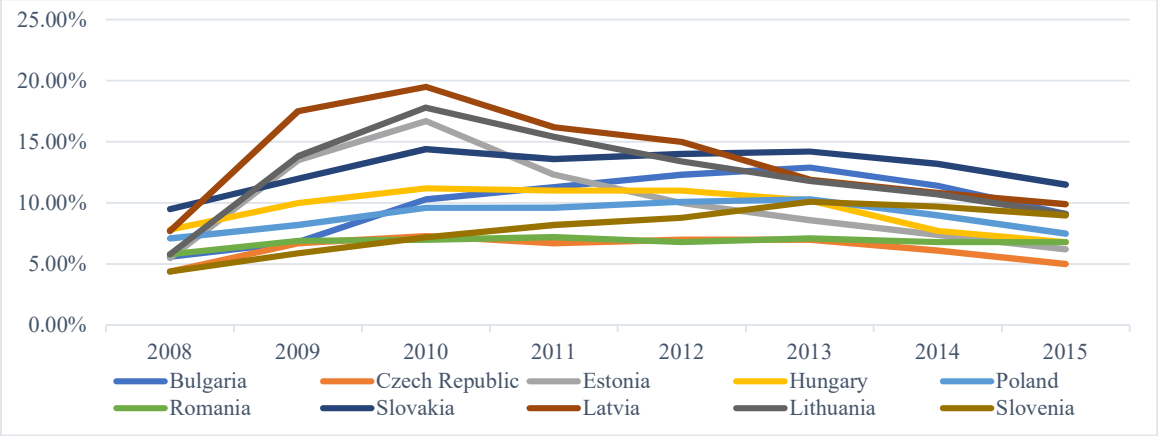
From the graph can be seen that Estonia, Latvia and Lithuania had the highest amount of unemployment in 2010, which is around three times higher than the level of unemployment in 2008. However, in 2015, the employment rate returned almost to the level it had in 2008.

Romania and Czech Republic have the lowest rates of unemployment compared to other chosen countries, and their unemployment rates are very similar.

The lowest unemployment rate measured in the time period from 2008 to 2015 for the chosen countries amounted to 4.40% and it was measured in 2008 in Czech Republic and Slovenia.

The highest level of unemployment rate amounted to 19.50% and it was measured in Latvia in 2010.

Figure 6: Unemployment rate



Source: Statista (no date).

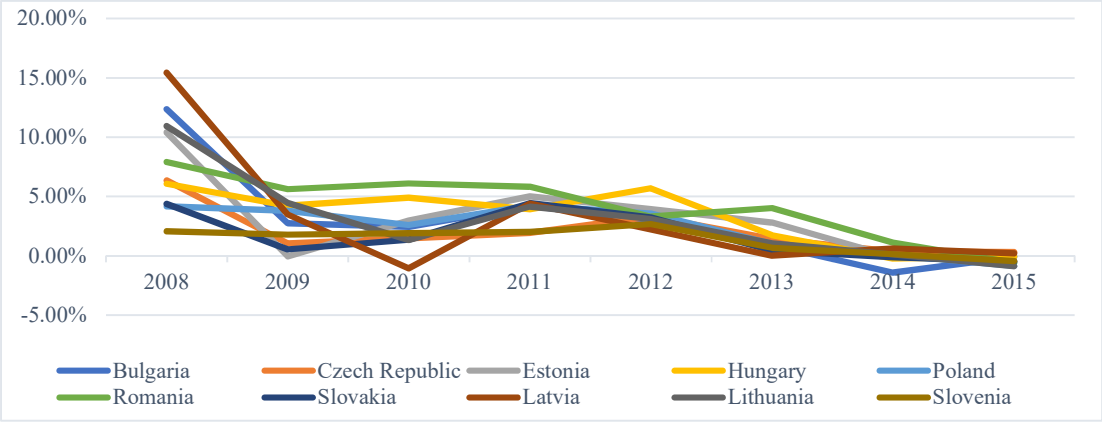
According to literature review (Gleeson, 2019; Bekeris 2012; Bolden-Barett, 2018), unemployment is expected to have negative effect on the SME performance.

3.2.2.7 Inflation Rate

Inflation rate per country is graphically presented in Figure 7.

As we can can see from the graph, the highest amounts of inflation were present in 2008 for most countries. The highest level of inflation in period from 2008 to 2015 for chosen countries was measured in Latvia in 2008 and it amounted to 15.43% and the second highest was measured in Bulgaria and it amounted to 12.35% in 2008. However, in 2015, all countries have very low amounts of inflation. The lowest amount is measured in 2014 in Bulgaria and it amounted to -1.42%.

Figure 7: Inflation rate



Sources: National Institute of Statistics (no date); Inflation.eu (no date); World Data (no date).

According to literature review (Rodeck, 2017, McMahon, 2017, Pettinger, 2016, Uzialko 2018, Burn-Callander, 2015) inflation can have positive and negative effects depending on the type of business.

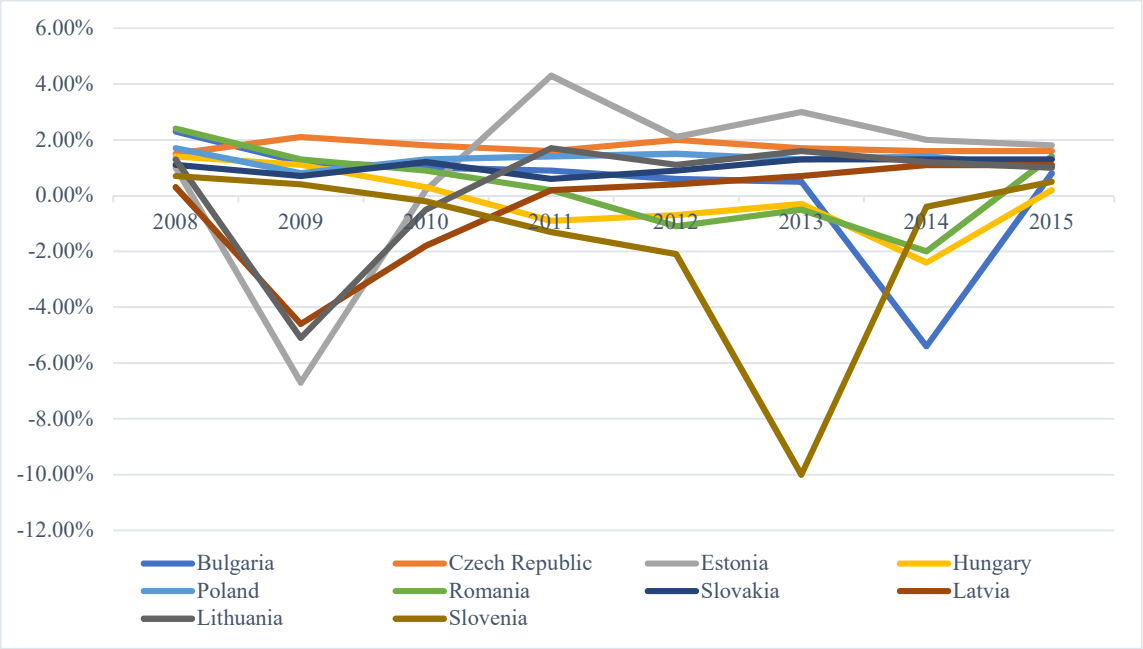
3.2.2.8 Bank Return on Assets (Before Tax)

Bank return on assets (before tax) per country is graphically presented in Figure 8.

As can be seen from the figure, there were some low values of ROA during period from 2008 to 2015. The lowest ROA amount was measured in Slovenia in 2013 and it amounted to -10.0%. The second lowest ROA was measured in Estonia in 2009 and amounted to -6.70%. Bulgaria also had low ROA in 2014, which amounted to -5.40%. Latvia and Lithuania too had low amount of ROA in 2009. In Latvia it amounted to -4.60% and in Lithuania it amounted to -5.20%.

However, in 2015, all of the ten chosen countries have a positive ROA. The highest ROA was measured in Estonia in 2011 and it amounted to 4.30%.

Figure 8: Bank return on assets (before tax)



Source: The World Bank (no date).

According to literature review (Hagel, Brown, Samoylova & Lui 2013; Sanderson, 2013; Hargrave, 2019), high ROA is expected to have positive influence on SME performance and vice versa.

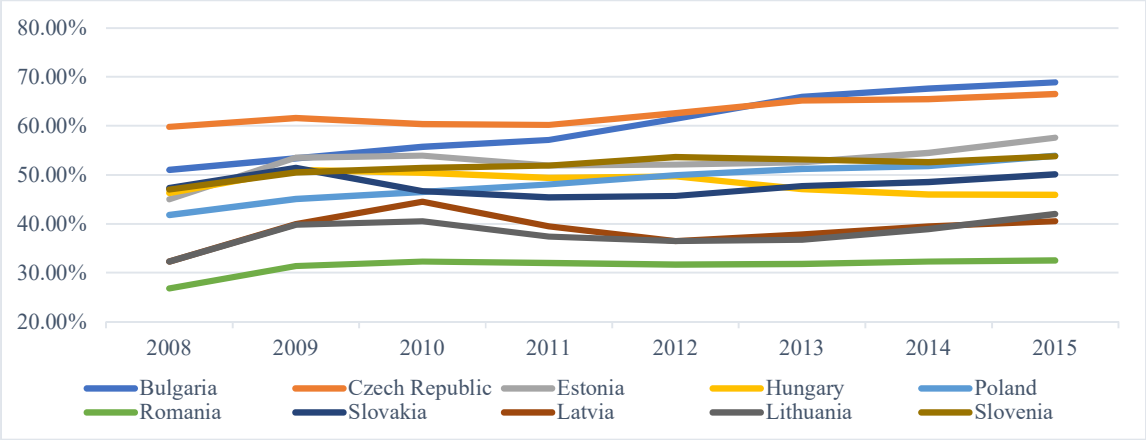
3.2.2.9 Bank Deposits to GDP

Bank deposits to GDP per country is graphically presented in Figure 9.

As can be seen from the graph, all of the countries mostly have similar amounts of bank deposits to GDP. Czech Republic had the highest ratio until 2012 when it started having the same ratio as Bulgaria. Romania has the lowest amount of bank deposits to GDP in the time period from 2008 to 2015 compared to chosen countries.

The highest amount of bank deposits to GDP was measured in Bulgaria in 2015 and it amounted to 68.90%. The lowest amount of bank deposits to GDP was measured in Romania in 2008 and it amounted to 26.80%.

Figure 9: Bank deposits to GDP



Source: The World Bank (no date).

According to literature review, this is one of the financial sector development indicators ant it is expected to have positive effect on SME performance.

3.2.2.10 Regulatory Capital to Risk - Weighted Assets

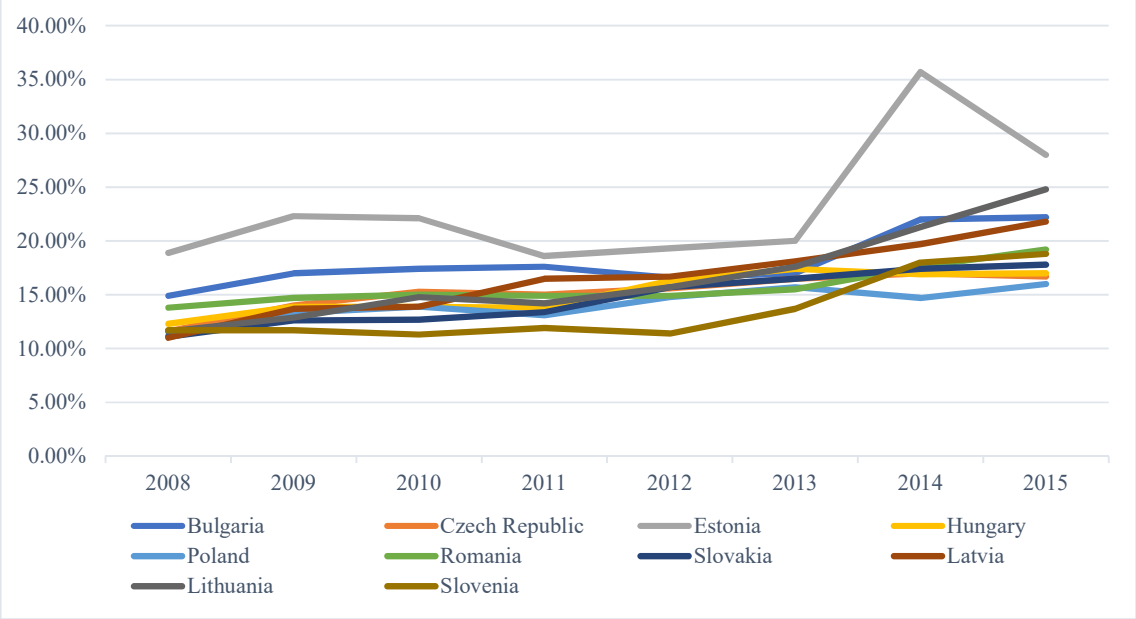
Regulatory capital to risk - weighted assets per country is graphically presented in Figure 10.

Risk-weighted assets are used to determine the minimum amount of capital that must be held by banks and other institutions to reduce the risk of insolvency. Bank regulatory capital is needed to limit risk and reduce potential unexpected loss, wich leads to bank stability which promotes SME development and stability.

As the graph shows, Estonia has the highest amounts of regulatory capital to risk-weighted assets. It also has the highest amount compared to the chosen countries in time period from

2008 to 2015 in 2014 and it amounts to 35.70%. All countries have an upward path from 2008 to 2015 in the amount of regulatory capital to risk weighted assets. The lowest amount was measured in Slovenia in 2012 and it amounted to 11.40%.

Figure 10: Regulatory capital to risk - weighted assets



Source: The World Bank (no date).

According to literature review, as this is a financial sector development indicator, it is expected to have positive influence on SME performance.

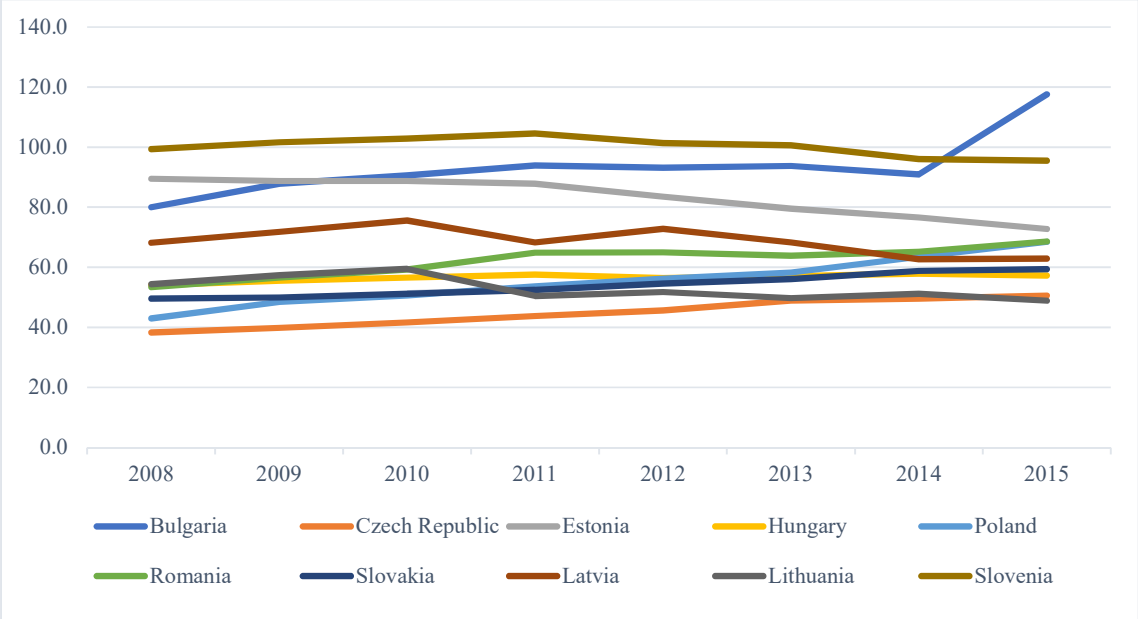
3.2.2.11ATMs per 100,000 Adults

ATMs per 100,000 adults per country is graphically presented in Figure 11.

As the graph shows, Slovenia generally has the highest number of ATMs per 100,000 adults. However, the highest amount, compared to other chosen countries in period from 2008 to 2015 was measured in Bulgaria in 2015 and it amounts to 117.6.

Czech Republic generally has the lowest amount of ATMS per 100,000 adults, closely followed by Lithuania whose number of ATMs lowered in the last few years. In 2015 it even has less ATMs per 100,000 adults than Czech Republic. However, the lowest amount was measured in Czech Republic in 2008 and it amounted to 38.3.

Figure 11: ATMs per 100,000 adults



Source: The World Bank (no date).

According to literature review (Oshima & Chan, 2011; Demirguc-Kunt, Klapper, Singer, Ansar & Hess, 2017) this is also an important financial sector development indicator and it is expected to have positive influence on SME performance.

3.2.2.12 Paying Taxes - Total Tax Rate (% of profit)

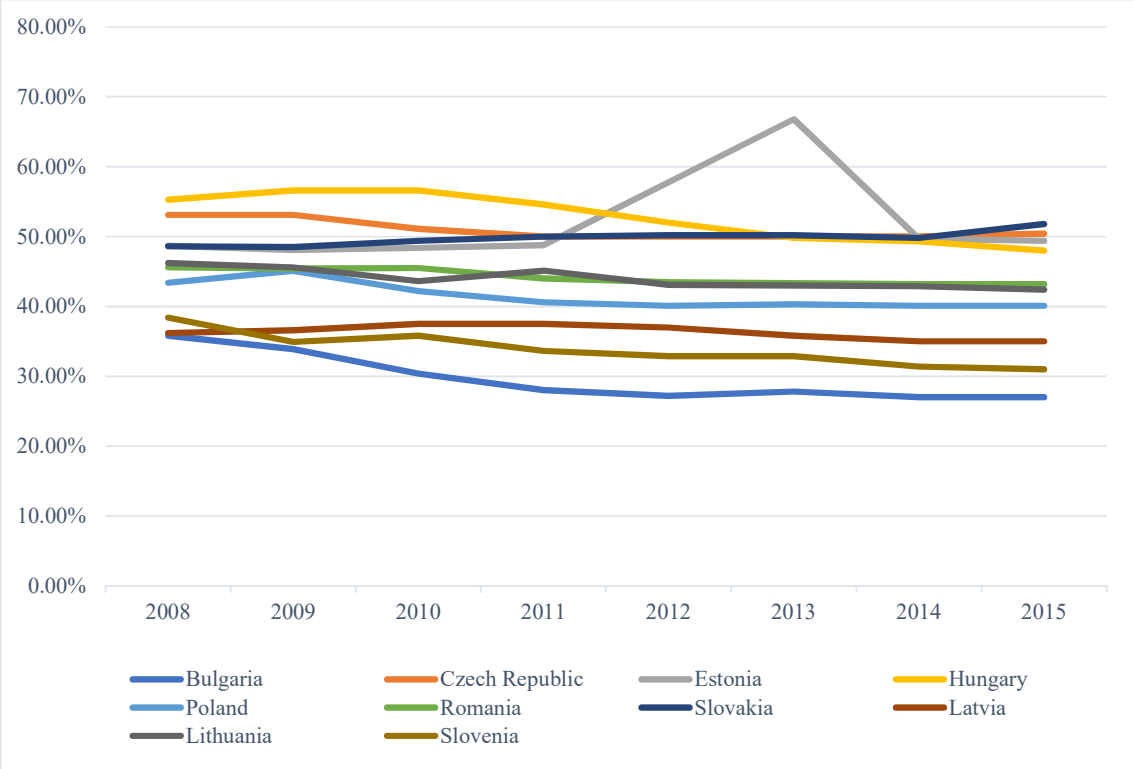
Paying taxes - total tax rate (% of profit) per country is graphically presented in Figure 12.

As the graph shows, almost all chosen countries have a steady line throughout 2008 – 2015 time period. The biggest change occurred in Estonia in 2013 and that is, at the same time, the highest measured amount of total taxes and it amounted to 66.80%.

Bulgaria generally has the lowest amount of total tax rate. The lowest amount of total tax rate is measured in Bulgaria in 2014 and 2015 and it amounts to 27%.

During 2013, Slovakia, Czech Republic and Hungary had almost the same amount of tax rate, as shown on the graph. In 2015, Slovakia had the highest amount of tax rate and Bulgaria had the lowest.

Figure 12: Paying taxes - total tax rate



Source: Doing Business (2018).

According to literature review, high level of taxes is expected to have negative effect on the SME performance.

3.2.2.13 Starting a Business - Distance to Frontier

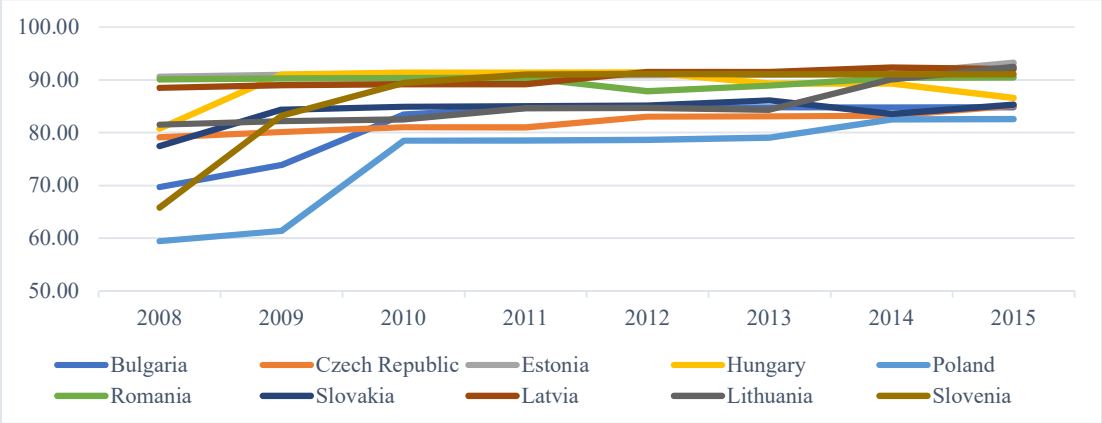
Starting a business - DTF per country is graphically presented in Figure 13. DTF measures the distance of each economy to the "frontier," which represents the best performance observed on each of the indicators.

As shown in Figure 13, most changes in starting a business - DTF occurred until 2010. Poland and Slovenia had the most changes in time period between 2008 and 2010.

The lowest DTF, compared to other chosen countries in the time period between 2008 and 2015 was measured in Poland in 2008 and amounted to 59.45. In 2015, it still had the lowest DTF compared to other countries.

The highest DTF was measured in Estonia in 2015 and it amounts to 93.25.

Figure 13: Starting a business - distance to frontier



Source: Doing Business (2018a).

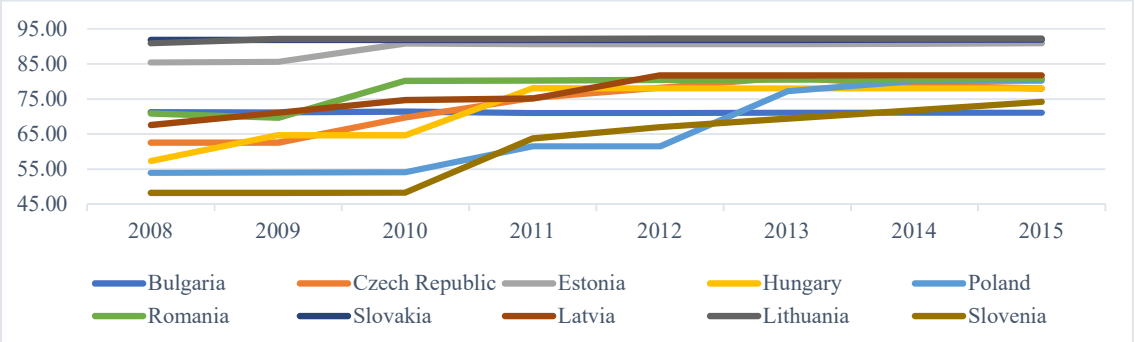
According to literature review (Audretsch, Keilbach & Lehmann, 2006; Doing Business, 2018a; Klapper, Lewin & Quesada, 2009), the higher the DTF to start a business, the more positive effect it has on SME performance (taking into account that the score of 75 means that the economy was 25 percentage points from the frontier).

3.2.2.14 Registering Property – Distance to Frontier

Registering a property - DTF per country is graphically presented in Figure 14. As we can see from the graph, Lithuania had the least changes in DTF during the time period from 2008 to 2015, compared to other chosen countries. It has similar values of DTF as Estonia since 2010. Bulgaria also did not feel many changes in this time period.

The lowest amount of DTF was measured in Slovenia in 2008 and 2009 and it amounted to 48.28. The highest DTF value was measured in Lithuania in 2014 and 2015 and it amounts to 92.23. In 2015, Bulgaria has the lowest DTF value.

Figure 14: Registering property - distance to frontier



Source: Doing Business (2018b).

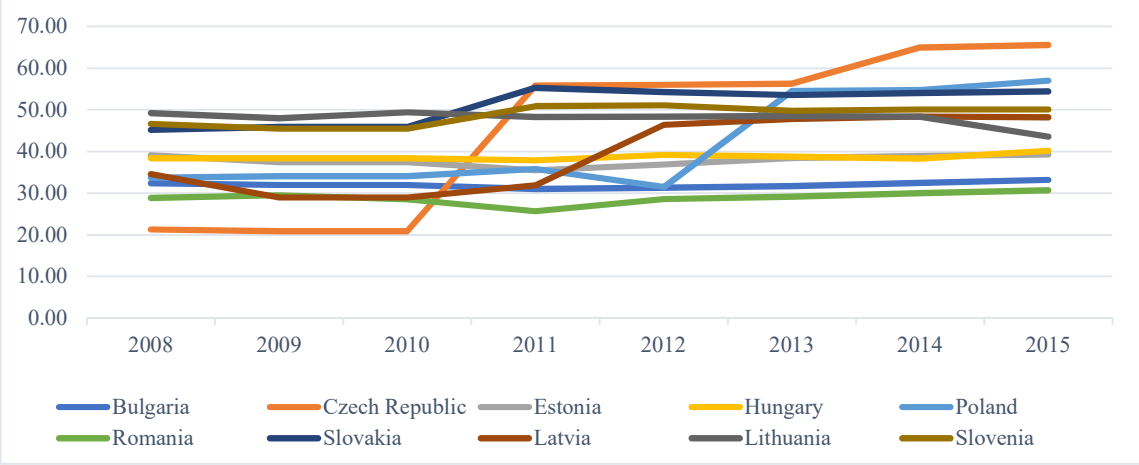
According to literature review (Doing Business, 2018b; Deininger, Songqing, Shouying, Ting & Fang, 2015; Deininger, 2003), the higher the DTF to register a property, the more positive effect it has on SME performance (with the same logic of calculation of DTF as with the previous variable).

3.2.2.15 Resolving Insolvency – Recovery Rate (Cents on the Dollar)

Resolving insolvency – recovery rate (cents on the dollar) per country is graphically presented in Figure 15. As we can see from the graph, Czech Republic felt the sharpest changes compared to other countries in the time period between 2008 and 2015. It had the lowest amount of recovery rate, measured in 2009 and 2010 which amounted to 20.90. At the same time, in 2015 it has the highest amount of recovery rate which amounts to 65.60.

In 2015, Bulgaria had the lowest recovery rate. In Lithuania, the recovery rate worsened, having the lowest value in 2015 compared to previous years.

Figure 15: Resolving insolvency - recovery rate



Source: Doing Business (2018c).

According to literature review (Gine & Love, 2006; Dewaelheyns & Van Hulle, 2006) the higher the amount of recovery rate, the better effect it has on the SME performance.

4 EMPIRICAL RESULTS

In this part of the analysis I will test the empirical model and explore the explanatory power of the above mentioned variables in explaining the variation in SME activity.

Descriptive analysis of variables is shown in the Appendix 4. Also, list of used independent variables and their abbreviations can be found in Appendix 3.

4.1 Regression analysis

The main purpose of the thesis is to research and measure the determinants of the SME performance in the selected CEE countries. For the purpose of this thesis, regression analysis in Stata will be conducted to test several research questions. It will be used to measure relation between different indicators and SME performance. I apply the OLS, FE and RE models.

After correlation matrix is reviewed, it has shown that GD and GE variables show high positive correlation with GDP. Also, these two variables show high correlation with each other. Because of this, I decided to not use these two variables in the regression analysis. Correlation matrix is presented in Appendix 5.

Linear regression model is presented next:

$$TGDPR = \beta + \beta_1 GDP + \beta_2 GCI + \beta_3 CPI + \beta_4 UR + \beta_5 IR + \beta_6 BDGDP + \beta_7 ATM + \beta_8 RCRWA + \beta_9 BROA + \beta_{10} PT + \beta_{11} SB + \beta_{12} RP + \beta_{13} RI + u \quad (3)$$

Where TGDPR is SME turnover to GDP ratio, GDP is gross domestic product, GCI is global competitive index, CPI is corruption perceptions indeks, UR is unemployment rate, IR is inflation rate, BDGDP is bank deposits to GDP ratio, ATM is ATMs per 100,000 adults, RCRWA is regulatory capital to risk weighted assets, BROA is bank return on assets (before tax), PT is paying taxes - total tax rate (% of profit), SB is starting a business (DTF), RP is registering property (DTF) and RI is resolving insolvency (recovery rate - cents on the dollar).

4.2 Variables and models used

In this thesis OLS, FE and RE models are used. Eurostat database "Annual enterprise statistics for special aggregates of activities" is used as the primary source of information on the SME turnover (Eurostat, no date). This database is part of the Main indicators of structural business statistics databases. I used the turnover or gross premiums written - million euro. SME turnover relative to the country GDP will serve as the dependent variable in this thesis. Regarding the observation period, the last year available in this database at the time of writing was 2015, and the first year with comparable data is 2008 so this period between 2008 and 2015 will be used for the analysis. SMEs are classified according to their economic activities in this Eurostat database. For the independent variables, three groups of variables will be employed. The first one is comprised of macroeconomic indicators, such as GDP, unemployment rate and inflation rate. The second group contains indicators of financial development, such as bank deposits to GDP, ATMS per 100,000 adults, regulatory capital to risk-weighted assets and bank return on assets (before tax). The third group are indicators taken from the doing business data. They are: starting a business - DTF, paying taxes - total tax rate (% of profit), registering property - DTF and resolving insolvency -

recovery rate (cents on the dollar). Also, global competitiveness index and corruption perceptions index will be used as variables. As an additional factor, transitional indicators assessed by EBRD will be taken into account. Assessments are made in six areas: large scale privatization, small scale privatization, governance and enterprise restructuring, price liberalization, trade and foreign exchange system and competition policy. Value variables will be deflated by the relevant deflator. Also, three dummy variables are used: time, industry and country dummy variable.

4.3 Interpretation of results

First I will present complete results table:

Table 2: Results of OLS regression equation (3)

	OLS		**Fixed effects**		**Random effects**	
TGDPR	Coeff.	Robust St. Errors	Coeff.	Robust St. Errors	Coeff.	Robust St. Errors
GDP	-2.09	(7.66)**	-1.43	(6.33)***	-1.86	(9.59)*
GCI	-0.022	(0.0098)	0.002	(0.0068)	0.009	(0.007)
CPI	0.0003	(0.0002)	-0.0002	(0.0002)	-0.0003	(0.0002)*
UR	0.0322	(0.0389)	0.13	(0.022)**	0.097	(0.0296)**
IR	0.012	(0.0096)	0.015	(0.008)***	0.0307	(0.0154)*
BDGDP	0.097	(0.0141)**	0.122	(0.0096)**	0.111	(0.011)**
ATM	0.000	(0.000)	0.0001	(0.000)**	0.0002	(0.000)**
RCRWA	0.028	(0.0367)	0.107	(0.0369)*	0.0875	(0.0252)**
BROA	0.033	(0.0542)	0.0969	(0.0257)**	0.1733	(0.0423)**
PT	0.103	(0.0170)**	0.106	(0.009)**	0.1021	(0.0125)**
SB	-0.0002	(0.0002)	7.68	(0.0001)	-0.0001	(0.0002)
RP	-0.004	(0.0001)**	-0.006	(0.0001)**	-0.0005	(0.0001)**
RI	0.0002	(0.0001)*	0.0002	(0.0001)***	0.0002	(0.000)*
Constant	0.0483	(0.0414)	0.007	(0.0387)	-0.0004	(0.0335)
Time dummy	Yes		Yes		Yes	
Industry dummy	Yes		Yes		Yes	
Country dummy	Yes		Yes		Yes	
No. of observations	7243		7243		7243	
R-sq within			0.0019		0.0019	
R-sq between			0.3020		0.1154	
Overall	0.9700		0.0018		0.0018	

Source: Own work.

*-significance at the 5% level

**- significance at the 1% level

***- significance at the 0.1% level

Note: Standard errors in parenthesis

As an additional factor, transitional indicators assessed by EBRD were considered. Assessments are made in six areas: large scale privatization, small scale privatization, governance and enterprise restructuring, price liberalization, trade and foreign exchange system and competition policy. The measurement scale for the indicators ranges from 1 to 4+, where 1 represents little or no change from a rigid centrally planned economy and 4+ represents the standards of an industrialized market economy. Transitional indicators are measured until 2014. When observing trends in the period of 2008 to 2014, for each of the 6 areas, there were almost no changes throughout the years observed, or they were insignificant. Additionally, transition indicators for Czech Republic are not measured. Because of this, I decided not to include them in the regression, as they would not change the obtained results.

Interpretation of results:

If GDP increases by 1 monetary unit, we expect turnover to GDP ratio to decrease by an average of 2.09 percentage points, ceteris paribus, i.e. it would have negative effect on SME performance. We have to consider the possibility of bias because of the possibility of SME turnover affecting GDP, which also can explain why results regarding GDP are not in line with our expectations based on literature review. If the ratio of bank deposits to GDP increases by 1 percentage point, we expect the turnover to GDP ratio to increase by an average of 0.097 percentage points, ceteris paribus, meaning it would have positive effect on SME performance. This finding is consistent with what was expected based on literature review. For economic development, which leads to SME development, it is important that financial sector is developed and that banks are stable and healthy, and this is one of the indicators proving it. If the percentage of tax-driven profit increases by 1 percentage point, we expect the turnover to GDP ratio to increase on average by 0.103 percentage points, ceteris paribus. This result is not in line with our expectations based on the literature review. If registering property - DTF variable increases by 1 percentage point, we expect the turnover to GDP ratio to be reduced by an average of 0.0004 percentage points, ceteris paribus. This is not in line with our expectations based on literature review - the higher the DTF to start a business, the more positive effect it has on SME performance. If resolving insolvency - recovery rate is increased by 1 percentage point, we expect the TGDPR to be increased by an average of 0.0002 percentage points, ceteris paribus. This is in line with our expectations based on literature review. An advantage of a good insolvency regime is that it should prevent premature liquidation of sustainable businesses. Another advantage is that it should also discourage lenders from issuing high-risk loans as well as discourage managers and

shareholders from taking inconsiderate loans and making other imprudent financial decisions (Djankov, Hart, McLiesh & Shleifer, 2008).

Hausman test is used to conclude which model is preferred, FE or RE. Result is not significant, which means that RE model is preferred. This model provided more significant variables that affect SME performance. Based on this we can conclude that the relative share of SMEs is not very country specific.

However, there are two constraints that should be considered when interpreting the results: the time period starts in 2008 which is the period of the financial crisis. Part of the observation period (the beginning of the observation period) will be affected by it. This has effect on the research as, in the period of financial crisis, variables affecting SME performance changed at the higher pace and in the greater amount than they would normally, affecting SMEs and entrepreneurship as a whole more extremely than it would in the period without financial crisis. Also, the period of eight years is short. Analysis would be improved if longer time period would be used, as it would encompass more changes in variables and more effects on SME performance, building more reliable results and conclusions.

After the results of the regression have been presented, we can accept or reject the set research questions.

The first research question is:

1: Better macroeconomic indicators, such as GDP, unemployment rate, inflation rate, government debt, have a statistically significant positive influence on the performance of SMEs.

From the results we can see that not all of the chosen macroeconomic indicators had statistically significant influence on the SME performance, only GDP did. But, contrary to the expectation, better GDP had negative effect on SME performance.

The second research question is:

2: Better performing financial markets have a statistically significant positive influence on the relative performance of SMEs.

As can be seen from the results, not all of the chosen financial market indicators had statistically significant positive effect on the SME performance, except ratio of bank deposits to GDP.

The third research question is:

3: Selected economic factors significantly influence the performance of SMEs.

As can be seen from the results, most of the chosen economic factors had significant influence on the SME performance, except starting a business - distance to frontier.

Overall, I find that three variables had statistically significant positive influence on SME performance: ratio of bank deposits to GDP, paying taxes – total tax rate (% of profit) and resolving insolvency - recovery rate (cents on the dollar). Based on the findings, we can conclude that for better SME performance, it is important that financial sector of the country is developed and that banks are stable and healthy. Also, tax rates should be kept at the reasonable level. It is also important that country has good insolvency regime so that it can prevent premature liquidation of sustainable businesses and discourage lenders from issuing high-risk loans as well as discourage managers and shareholders from taking inconsiderate loans and making other imprudent financial decisions (Djankov, Hart, McLiesh & Shleifer, 2008).

CONCLUSION

This paper aimed at researching what are the determinants of the SME performance. The research was conducted on ten chosen CEE countries: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. The time period chosen was from 2008 to 2015.

The first part of the paper offered the SME definition and its recent development in European Union. Second part of the paper focused on the offering overview of SMEs in specific CEE countries, based on the small business act factsheets. Third section described and provided literature review on the chosen SME performance determinants. Section four defined data and methodology used and offered graphical review of chosen performance determinants in the specific time period. In the fifth section, summary statistics, main regression results and their interpretation are described.

For the independent variables, three groups of variables were used. The first one is comprised of macroeconomic indicators, such as GDP, unemployment rate and inflation rate. The second group contained indicators of financial development, such as bank deposits to GDP, ATMS per 100,000 adults, regulatory capital to risk-weighted assets and bank return on assets (before tax). The third group were indicators taken from the doing business data. They are: starting a business - DTF, paying taxes - total tax rate (% of profit), registering property - DTF and resolving insolvency - recovery rate (cents on the dollar). Also, global competitiveness index and corruption perceptions index were taken into account as variables.

Regarding the set research questions, better macroeconomic indicators, such as GDP, unemployment rate, inflation rate, government debt were not found to have statistically significant influence on the SME performance, except GDP, but contrary to the expectation, better GDP had negative influence. Better performing financial markets were also not found

to have statistically significant positive influence on the relative performance of SMEs, except ratio of bank deposits to GDP. Selected economic factors were found to mostly have significant influence on the performance of SMEs, except starting a business - DTF.

The main purpose of the thesis was to research and measure the determinants of the SME performance in the selected CEE countries and to deepen the knowledge on the factors affecting SME performance. What has to be mentioned is that this research is limited in a way that not all determinants affecting SME performance could be considered (such as business cycle, demand, all factors affecting business environment, etc.). Not all of them could be captured and not all of them are measurable. This causes bias in the estimation that could not be escaped so one should be careful in interpreting the reached results.

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APPENDICES

Appendix 1: Povzetek (Summary in Slovene language)

Mala in srednje velika podjetja (v nadaljevanju: MSP) so pomembna za uspešno gospodarsko rast in družbeni razvoj. Nacionalno gospodarsko zdravje je zaradi njihovega velikega pomena odvisno od zdravja MSP. Vendar pa je na njihovi poti do uspeha veliko ovir in šibkih točk v primerjavi z večjimi podjetji. MSP so za gospodarstvo velikega pomena, vendar se še vedno srečujejo z ovirami in težavami v razvoju in v različnih državah dosegajo različne stopnje uspeha, kar je motivacija za pričujočo analizo. Glavni namen je raziskati in meriti dejavnike uspešnosti MSP v izbranih državah Srednje in Vzhodne Evrope.

V prvem delu naloge je predstavljena opredelitev MSP. Drugi del se osredotoča na pregled MSP v izbranih državah Srednje in Vzhodne Evrope, ki temelji na aktu o malih podjetjih. Tretji del opisuje in predstavlja pregled literature izbranih dejavnikov uspešnosti MSP. Četrti del določa uporabljene podatke in metodologijo ter daje grafični pregled izbranih dejavnikov uspešnosti v določenem časovnem obdobju. V petem razdelku so opisane zbirne statistike, osnovni rezultati regresijske analize in njihova interpretacija.

Raziskava je bila opravljena v desetih državah: Bolgariji, na Češkem, v Estoniji, na Madžarskem, v Latviji, Litvi, na Poljskem, v Romuniji, na Slovaškem in v Sloveniji. Opazovano je časovno obdobje od leta 2008 do 2015. Za preizkus več delovnih hipotez smo izvedli regresijsko analizo v Stati. Uporabili smo je za merjenje razmerja med različnimi kazalniki in uspešnostjo MSP. Kot primarni vir informacij o prometu z MSP se uporabljajo sekundarni javno dostopni podatki za empirične analize. Promet MSP glede na bruto domači proizvod države (v nadaljnjem besedilu: BDP) se v tezi uporablja kot odvisna spremenljivka. Za neodvisne spremenljivke se uporabljajo tri skupine spremenljivk. Prvo sestavljajo makroekonomski kazalci. Druga skupina vsebuje kazalnike finančnega razvoja, tretja skupina pa kazalnike, ki izhajajo iz podatkov Doing Business. Poleg tega se kot spremenljivki uporabljata Globalni indeks konkurenčnosti in Indeks zaznave korupcije. V regresijo so vključeni trije sklopi binarnih (dummy) spremenljivk: čas, država in industrija. Izbran je bil širok razpon kazalnikov, ne da bi se osredotočali samo na eno skupino, kar je zagotovilo širšo uporabnost in učinkovitost napovedovanja.

Glede na sklop hipotez ni bilo ugotovljeno, da boljši makroekonomski kazalniki statistično pomembno vplivajo na uspešnost MSP, razen BDP, vendar je za razliko od pričakovanega, višji BDP imel negativen vpliv. Finančni trgi z boljšimi rezultati prav tako niso imeli statistično pomembnega pozitivnega vpliva na relativno uspešnost MSP z izjemo razmerja bančnih depozitov in BDP. Izbrani gospodarski dejavniki imajo običajno pomemben vpliv na uspešnost MSP, razen v primeru začetka poslovanja - oddaljenost od najboljše vrednosti.

Appendix 2: List of business categories

Accommodation and food service activities
Activities of head offices; management consultancy activities
Administrative and support service activities
Advertising and market research
Architectural and engineering activities; technical testing and analysis
Civil engineering
Computer programming, consultancy and related activities
Computer related services
Construction
Construction of buildings
Electricity, gas, steam and air conditioning supply
Employment activities
Food and beverage service activities
High-technology manufacturing
ICT manufacturing
ICT services
Information and communication
Information and Communication Technology - Total
Information sector
Information service activities
Land transport and transport via pipelines
Legal and accounting activities
Manufacture of basic metals
Manufacture of beverages
Manufacture of chemicals and chemical products
Manufacture of computer, electronic and optical products
Manufacture of electrical equipment
Manufacture of fabricated metal products, except machinery and equipment
Manufacture of food product
Manufacture of furniture
Manufacture of leather and related products
Manufacture of machinery and equipment n.e.c.
Manufacture of motor vehicles, trailers and semi-trailers
Manufacture of other non-metallic mineral products
Manufacture of paper and paper products
Manufacture of rubber and plastic products
Manufacture of textiles
Manufacture of wearing apparel
Manufacture of wood and of products of wood and cork, except furniture; manufacture
Manufacturing
Medium high-technology manufacturing
Medium low-technology manufacturing
Mining and quarrying
Motion picture, video and television programme production, sound recording and music
Office administrative, office support and other business support activities
Other professional, scientific and technical activities
Printing and reproduction of recorded media

Professional, scientific and technical activities
Programming and broadcasting activities
Publishing activities
Real estate activities
Rental and leasing activities
Repair of computers and personal and household goods
Retail trade, except of motor vehicles and motorcycles
Scientific research and development
Security and investigation activities
Services to buildings and landscape activities
Specialised construction activities
Telecommunications
Total business economy; repair of computers, personal and household goods; except
Transportation and storage
Travel agency, tour operator reservation service and related activities
Veterinary activities
Warehousing and support activities for transportation
Waste collection, treatment and disposal activities; materials recovery
Water collection, treatment and supply
Wholesale and retail trade and repair of motor vehicles and motorcycles
Wholesale and retail trade; repair of motor vehicles and motorcycles
Wholesale trade, except of motor vehicles and motorcycles
Manufacture of food products
Water supply; sewerage, waste management and remediation activities
Accommodation
Total business economy except financial and insurance activities
Total knowledge-intensive activities
Non-financial knowledge-intensive activities - business industries
Mining of coal and lignite
Extraction of crude petroleum and natural gas
Mining of metal ores
Other mining and quarrying
Mining support service activities
Low-technology manufacturing
Manufacture of tobacco products
Manufacture of coke and refined petroleum products
Manufacture of basic pharmaceutical products and pharmaceutical preparations
Manufacture of other transport equipment
Other manufacturing
Repair and installation of machinery and equipment
Sewerage
Remediation activities and other waste management services
High-technology services
Total tourism industries
Tourism industries - mainly tourism
Tourism industries - partially tourism
Total tourism industries; urban and suburban passenger land transpor
Total tourism industries; other accommodation and food service activities; real estate
Passenger transport

Passenger land transport
Passenger road transport
Passenger water transport
Passenger land and water transport
Water transport
Air transport
Postal and courier activities
Hotels; holiday and other short-stay accommodation; camping grounds, recreational
Hotels; holiday and other short-stay accommodation; camping grounds, recreational
Restaurants and mobile food and beverage service activities
Knowledge-intensive high-technology services
Knowledge-intensive market services
Renting and leasing of motor vehicles, recreational and sports goods

Source: Eurostat (no date).

Appendix 3: Used independent variables and their abbreviations

Abbreviation	Full name
TGDPR	SME turnover to GDP ratio
GDP	Gross domestic product
GD	Government debt
GE	Government expenditure
GCI	Global competitiveness index
CPI	Corruption perceptions index
UR	Unemployment rate
IR	Inflation rate
BDGDP	Bank deposits to GDP
ATM	ATMs per 100,000 adults
RCRWA	Regulatory capital to risk weighted assets
BROA	Bank return on assets (before tax)
PT	Paying taxes – total tax rate (% of profit)
SB	Starting a business – distance to frontier
RP	Registering property – distance to frontier
RI	Resolving insolvency - recovery rate (cents on the dollar)

Source: Own work.

Appendix 4: Descriptive analysis of variables

Variable	Observations	Average value	Standard deviation	min	max	Unit of measurement
TGDPR	7243	0,11	0,35	0.00	2.85	Percentage
GDP	8800	100,364.1	106,511.7	14,146	430,055	€ Mill.
GD	8800	44,748.14	56,113.56	741	222,120	€
GE	8800	35,326.02	46,887.67	1,784	179,296.8	€
GCI	8800	4.35	0.19	3.93	4.74	Index
CPI	8800	50.67	9.27	30	70	Index
UR	8800	0.097	0.033	0.044	0.195	Percentage
IR	8800	0.035	0.078	-0.014	0.67	Percentage
BDGDP	8800	0.480	0.098	0.268	0.689	Percentage
ATM	8800	67.18	18.71	38.3	117.6	Number
RCRWA	8800	0.163	0.039	0.11	0.357	Percentage
BROA	8800	0.004	0.021	-0.1	0.043	Percentage
PT	8800	0.44	10.25	20.9	65.6	Percentage
RP	8800	77.16	12.05	48.28	92.23	DTF
SB	8800	85.47	6.65	59.45	93.25	DTF
RI	8800	41.19	10.249	20.9	65.6	Percentage

Source: Own work.

Appendix 5: Correlation matrix and significance levels

	GDP	GD	GE	GCI	CPI	UR	IR	BDGDP	ATM	RCRWA	BROA	PT	SB	RP	RI
GDP	1.0000														
GD	0.9612	1.0000													
	0.0000														
GE	0.9142	0.9298	1.0000												
	0.0000	0.0000													
GCI	0.0471	0.0539	-0.0547	1.0000											
	0.0000	0.0000	0.0000												
CPI	-0.0073	0.0880	0.0751	0.7174	1.0000										
	0.4920	0.0000	0.0000	0.0000											
UR	-0.2935	-0.1883	-0.1345	-0.1908	-0.0337	1.0000									
	0.0000	0.0000	0.0000	0.0000	0.0015										
IR	-0.0853	-0.0953	-0.0345	-0.0510	-0.0529	-0.0756	1.0000								
	0.0000	0.0000	0.0012	0.0000	0.0000	0.0000									
BDGDP	0.0504	0.0690	-0.1596	0.3592	0.2190	-0.1113	-0.0858	1.0000							
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000								
ATM	-0.4271	-0.4175	-0.2999	-0.0430	0.2124	0.0371	0.1606	0.2595	1.0000						
	0.0000	0.0000	0.0000	0.0001	0.0000	0.0005	0.0000	0.0000							
RCRWA	-0.2658	-0.2390	-0.2582	0.2450	0.3495	0.0341	-0.2200	0.2003	0.1980	1.0000					
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0014	0.0000	0.0000	0.0000						
BROA	0.2087	0.1530	0.0914	0.1357	-0.0241	-0.3068	-0.4666	0.0820	-0.3077	0.0837	1.0000				
	0.0000	0.0000	0.0000	0.0000	0.0239	0.0000	0.0000	0.0000	0.0000	0.0000					
PT	0.0981	0.1399	0.0436	0.3148	0.1801	-0.0949	-0.0908	-0.0471	-0.6022	-0.0029	0.2680	1.0000			
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7843	0.0000				
SB	-0.4777	-0.4067	-0.3896	0.0486	0.2494	0.2352	0.0332	-0.1496	0.2299	0.4082	-0.2357	0.0583	1.0000		
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0018	0.0000	0.0000	0.0000	0.0000	0.0000			
RP	-0.3343	-0.3034	-0.3028	0.0945	0.0867	0.3874	-0.1305	-0.1867	-0.2257	0.4519	0.0610	0.3326	0.4088	1.0000	
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
RI	0.0042	0.0736	-0.0158	0.2112	0.3614	0.0842	-0.0312	0.1685	-0.0780	-0.0043	0.0504	-0.0726	0.0340	0.3358	-1.0000
	0.6946	0.0000	0.1384	0.0000	0.0000	0.0000	0.0034	0.0000	0.0000	0.6870	0.0000	0.0000	0.0014	0.0000	

Source: Own work

Note: The top number presents the coefficient of correlation; the bottom number presents the significance level