UNIVERSITY OF LJUBLJANA

FACULTY OF ECONOMICS

MASTER'S THESIS

THE DETERMINANTS OF CAPITAL STRUCTURE IN SMALL AND MEDIUM-SIZED COMPANIES – THE EXAMINATION OF FAILURE TO ACCUMULATE EQUITY CAPITAL DURING THE CRISIS

Ljubljana, June 2016 SNEŽANA SOKOLOVSKA

AUTHORSHIP STATEMENT

The undersigned Snežana Sokolovska, a student at the University of Ljubljana, Faculty of Economics, (hereafter: FELU), declare that I am the author of the master's thesis titled The Determinants of Capital Structure in Small and Medium-Sized Companies – the Examination of Failure to Accumulate Equity Capital During the Crisis, written under the supervision of Associate Professor Sergeja Slapničar Phd.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

The purpose of the thesis is to tackle the problem of indebtedness and insufficient equity capital accumulation in Slovenian small and medium enterprises (hereinafter SMEs; refer to Appendix A for all abbreviations) during the crisis by conducting an analysis of several financial ratios used as variables and testing the pecking order theory with a panel data regression model. The goal of the master's thesis is twofold. It should examine the financial ratios and prove the existence of a pecking order hierarchy of financing, assuming a preference for internal funds and debt to equity. We expect to come up with explanations for the lack of cash flows and earnings, assuming that free cash flows in these types of firms should typically be retained to finance maintenance and future growth opportunities.

The thesis begins with an analysis of the importance of the SMEs sector for economic growth and development. The first and the second chapters of the thesis analyze the importance of SMEs as significant contributors to economic growth and employment in both the European Union and in Slovenia. SMEs experienced significant growth before the crisis which was stalled during the recession years. However, this did not endanger their dominance over large companies, both in terms of presence in the market and number of employees. This has been a consequence of the higher flexibility of SMEs, especially micro companies, which are easy to establish and manage.

SMEs are expected to be the main driving force of the economic growth in both the European Union and globally. Hence, restoring growth of the SMEs sector by reinvigorating financial health and transparency as well as broadening the base of financial institutions able to identify and fund promising SMEs projects has already become a top priority for policy makers in the European Union.

The discussion on the importance of SMEs is succeeded by a literature review of SMEs financing patterns and capital structure theories, with the emphasis on the pecking order theory. Namely, the third chapter of the thesis analyzes the financing patterns in SMEs, which have been one of the major challenges for these firms, according to numerous studies. SMEs are typically financed with both debt and equity instruments. The most common external financing sources in SMEs are equity capital, debt capital, grants and subsidies, sources from European Union development institutions and structural funds as well as sources from international development institutions.

Internal financing is a very important source of financial sources, symbolizing solvency and the company's ability to partially repay their debts, in case the company ceases to exist. Securing internal financial sources has been a problem for the Slovenian SMEs during the recent crisis, due to which companies have become predominantly financed through debt instruments. Therefore, in

order to examine what might have been the causes for the insufficient equity capital, we should assess companies' operations and refer to the choice of capital structure.

The fourth and fifth chapters provide an overview of capital structure theories, referring to the choice of different financial sources that firms find most appropriate to finance the acquisition of assets and consequent operations with. Businesses typically select their capital structure considering the cost, nature, and availability of the alternatives. In the case of SMEs, the financing patterns usually reflect the owners' or managers' characteristic due to which the traditional capital structure theory is not the appropriate theoretical model. Therefore, alternative capital structure theories such as the static trade-off theory and the pecking order theory need to be addressed.

The static trade-off theory concept describes the capital structure choices of firms which are assumed to have set a target debt-to-value ratio and are gradually moving towards it, in a way that resembles firms' dividend adjustments towards a target payout ratio. The pecking order theory, on the other hand, describes a setting in which the firm prefers internal to external financing, and debt to equity issuance, in case it issues new securities.

In the traditional pecking order theory, the firm does not follow a predetermined debt-to-value ratio. The pecking order theory advocates that firms prefer internal to external financing. If internally generated funds are less than required, firms first refer to their cash balance or marketable securities portfolio. Should there be a need for external financing, firms will issue the "safest" securities first i.e. they start with debt, followed by hybrid securities, such as convertible bonds, only to choose equity at last (Myers, 1984; Myers & Majluf, 1984).

The research question is empirically tackled in the sixth and seventh chapters by introducing the hypotheses, methodology, descriptive analyses, and results. Considering the aforementioned financing patterns in the Slovenian SMEs and the observed hierarchy in financial sources, the pecking order theory should be the preferred theoretical model. In order to test whether the theoretical model of the pecking order theory explains capital structure, we conducted a panel data regression analysis in the statistical software Stata on a random sample of the 287 Slovenian SMEs, developed on the basis of the previous research. We made inferences about the factors that influence the choice of capital structure, by examining the impact of the financial ratios cash flows, profit margin, return on assets, tangible to total assets, growth in revenues on the short term, long term, and total leverage ratio.

The panel data regression model was the appropriate research method used for longitudinal data observed over time for the same cross section. Panel data is typically tackled with either fixed or random effects models. The pecking order theory in the thesis was tested with both models. In

order to determine which model was the preferred one, we conducted a Hausman's test (Wooldridge, 2010).

The last chapter is dedicated to the discussion of the results, concluding remarks, and further suggestions regarding the choice of capital structure in the Slovenian SMEs. The conclusions from the statistical tests allowed us to make inferences regarding the lack of equity capital accumulation, indebtedness and existence of a financing hierarchy explained by the pecking order theory.

1 THE ROLE OF SMES IN THE ECONOMY

In the aftermath of the 2008 global financial and debt crisis, there seems to be an ongoing lack of long term, credible and viable solutions which would reinvigorate growth and bring back economic prosperity. Much has been said about the importance of SMEs for economic growth and development as engines of innovation, competition, economy wide efficiency, and aggregate productivity growth. SMEs are significant contributors to employment, as 45.45% of the total, full time employment in the formal sector of most of the countries in the world arises from employment in such firms, in contrast to the employment share of large firms, which is 54.55%.

Within this category, small firms have the least contribution to employment, but compensate by generating the highest number of new jobs, i.e. 45.34% of all the jobs. They also have the highest employment and sales growth rates. Nevertheless, their impact on productivity growth does not accompany job creation, as there are still obstacles that prevent SMEs to reach the productivity growth potential of large firms, such as limited access to finance, the need for business training and literacy programs, as well as addressing other constraints such as taxes, regulations, and corruption (Ayyagari, Demirgüç-Kunt, & Maksimovic, 2011).

According to the definition adopted by the European Commission, an enterprise is considered to be any entity engaged in economic activity, irrespective of its legal form. This includes, in particular, self-employed persons and family businesses engaged in craft or other activities, and partnerships and associations regularly engaged in economic activity. The category of micro, small and medium-sized enterprises is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR40 million, and/or an annual balance sheet total not exceeding EUR20 million.

Within the SME category, a micro enterprise is defined as an enterprise which employs fewer than 10 persons and whose annual turnover and/or balance sheet total do not exceed EUR0.7 and 0.35 million, respectively. A small enterprise, on the other hand, is defined as an enterprise which employs fewer than 50 persons and an annual turnover and/or annual balance sheet total of which

do not exceed EUR8 and 4 million, respectively. An enterprise which employs no more than 250 persons, and has an annual turnover not exceeding EUR40 million, and/or an annual balance sheet not exceeding 20 million, is defined as a medium enterprise (European Parliament and Council Directive 2013/34/EU, 2013, p.28).

Table 1. SMEs categorization

Company's size	**Number of employees**	**Turnover**	**Balance sheet total**
Micro	< 10	< 0.70 million	< 0.35 million
Small	< 50	< 8.00 million	< 4.00 million
Medium	< 250	< 40.00 million	< 20.00 million

Source: European Parliament and Council Directive 2013/34/EU, 2013, p.28.

SMEs in the European Union experienced significant growth between 2002 and 2008, prior to the crisis. This sector contributed the most in creating new jobs, generating 9.4 million new jobs, as a consequence of the increase in the number of the established SMEs by 2.4 million, in contrast to the increase in the number of large firms by only 2000. Most of this growth should be attributed to the developed EU−15 countries, which account for 80% of the total number of SMEs, in comparison to the 20% of SMEs located in the new Member States. Taken together, SMEs account for most of the enterprises in both regions (Gagliardi et al., 2013).

The disparity among the number of SMEs in the developed and less developed EU Member States can be explained by the fact that, in general, there is a strong positive relation among firm creation and GDP per capita explaining the larger share of SMEs in the older member states. Nevertheless, there is a negative relation among GDP per capita and SMEs' contribution to employment, implying that small firms should contribute more to employment in lower income countries, than in high income countries (Ayyagari, Demirgüç-Kunt, & Maksimovic, 2011). This additionally highlights the importance of SMEs in smaller and/or lower income countries, i.e. the new EU member states, as well as the dependency on this sector as a job creator and growth engine.

Table 2 shows a comparison of the Slovenian and European SMEs, in terms of number of enterprises, number of employees, and gross values added for the observed period[1].

[1] The data presented in the table was adjusted with data for the Croatian SMEs.

Table 2. Comparison among the EU–28 and Slovenia´s SMEs

		Micro	**Small**	**Medium**	**SMEs**	**Large**	**Total**
Number of enterprises							
Slovenia	Number	101,320	5,873	1,207	108,400	223	108,623
	(%)	93.3%	5.4%	1.1%	99.8%	0.2%	100.0%
EU28	Number	19,818,918	1,414,381	234,965	21,468,264	45,867	21,514,131
	(%)	92.1%	6.6%	1.1%	99.8%	0.2%	100.0%
Number of employees							
Slovenia	Number	180,507	110,422	122,269	413,198	162,044	575,242
	(%)	31.4%	19.2%	21.3%	71.8%	28.2%	100.0%
EU28	Number	38,670,848	27,324,968	23,313,672	89,309,488	44,705,315	134,014,804
	(%)	28.9%	20.4%	17.4%	66.6%	33.4%	100.0%
Gross value added							
Slovenia	Number	3,682	3,381	3,898	10,961	6,133	17,094
	(%)	21.5%	19.8%	22.8%	64.1%	35.9%	100.0%
EU28	Number	1,308,119	1,120,327	1,119,731	3,548,176	2,587,322	6,135,498
	(%)	21.3%	18.3%	18.3%	57.8%	42.2%	100.0%

Source: Gagliardi et al., *Annual Report on European SMEs 2012/2013*, 2013, p.10.

As regards SMEs sector in the EU, they continue playing a key role in the European economy, as they represent 99.8% of all companies. In 2014, there were 21.5 million SMEs estimated, 92% of which are micro enterprises. This market segment currently employs 89 million out of the 134 million employed people, or 66.6% of the total, full time employment in the business economy, the remainder being employment in large companies. The sector also contributes significantly to the wealth of the European Union, as the estimated gross value added[2] for 2014 amounts to EUR3.5 trillion, or 57.8% of the total EUR6.1 trillion value added by the business economy (manufacturing, industry, utilities, constriction, trade, and services). Over the period between 2008 and 2014, as a consequence of the crisis, this segment added only 192,209 new jobs, although there was an increase in the total number of registered SMEs by 1,047,992, which partially explains the high unemployment numbers across the EU (Gagliardi et al., 2013).

Figure 1 shows a breakdown of SMEs in the European Union by industry type. The industry with the highest concentration of SMEs in the EU is the wholesale and retail trade subsector, participating with 6.1 million, or 28% out of all 21.5 million enterprises.

[2]Gross value added is a measure indicating economic wealth, obtained after subtracting immediate consumption from total output.

Figure 1. SMEs in EU−28 by industry type, 2014 in %

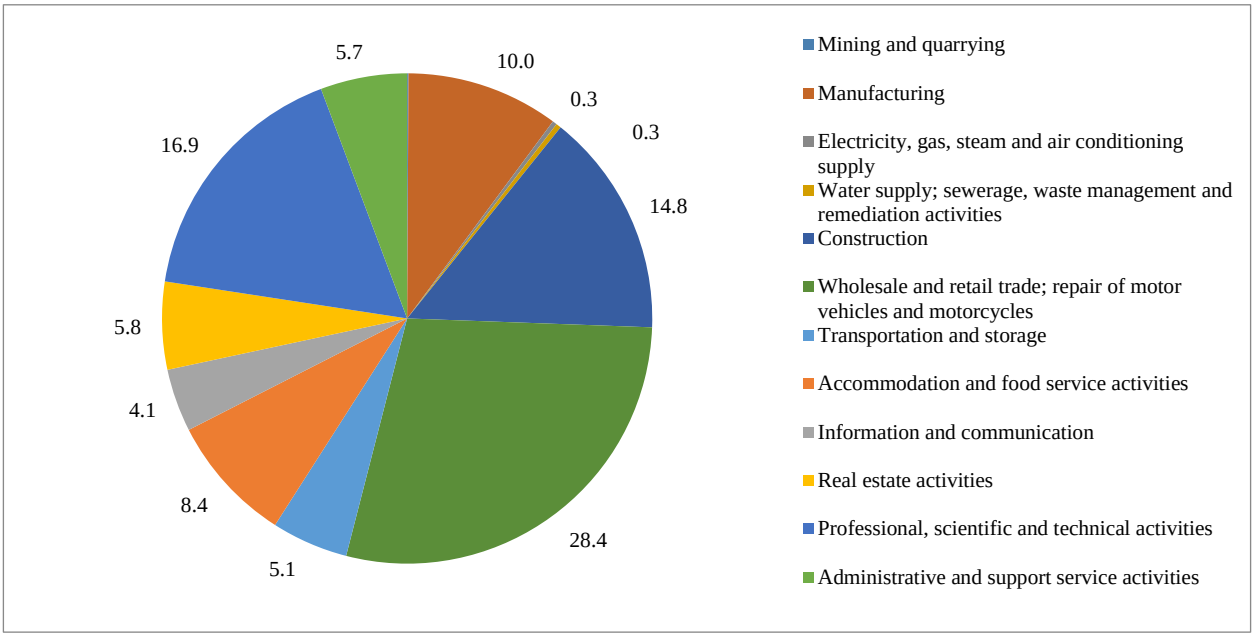
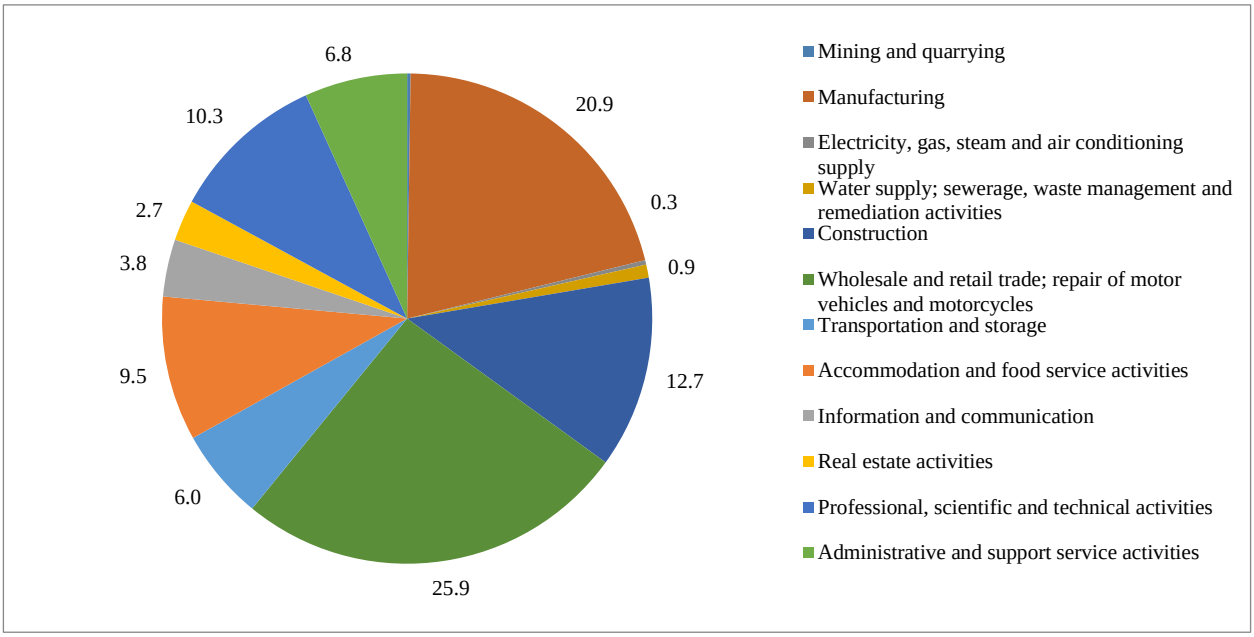


Figure 2 shows a breakdown of SMEs' contribution to employment in the European Union by industry. According to the 2014 estimations, the business sector contributes the most to the employment is the wholesale and retail trade sector, which employs 23 million people, 26% of the employment in SMEs, i.e. 71% of the total employment in this sector in the EU.

Figure 2. Employment in SMEs by industry type EU-28, 2014, in %



2 SMES IN SLOVENIA

As is the case in many European countries, Slovenia's SMEs have not been immune to the crisis of 2008, and are still suffering the consequences caused by it, although with varying intensity, depending on the industry in which they operate. For example, the manufacturing industry has shown signs of recovery, although it has not yet returned to pre-crisis levels. The construction industry has not yet recovered and is still undergoing economic restructuring, exacerbated to some point by the shortfall of the banking sector (European Commission, 2013).

Figure 3 shows a breakdown of SMEs in Slovenia by industry type. In Slovenia, the highest concentration of SMEs is found in the wholesale and retail trade, the professional, scientific and technical services, construction and manufacturing subsectors, which together account for 73% of all SMEs.

Figure 3. SMEs in Slovenia by industry type, 2014 in %

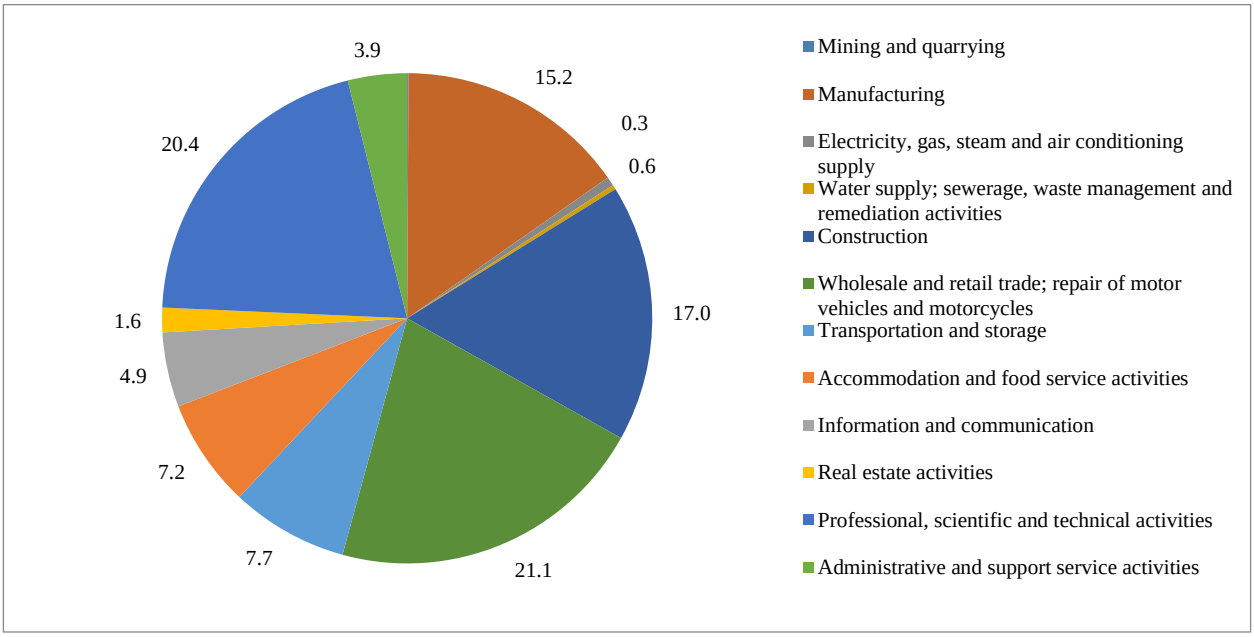
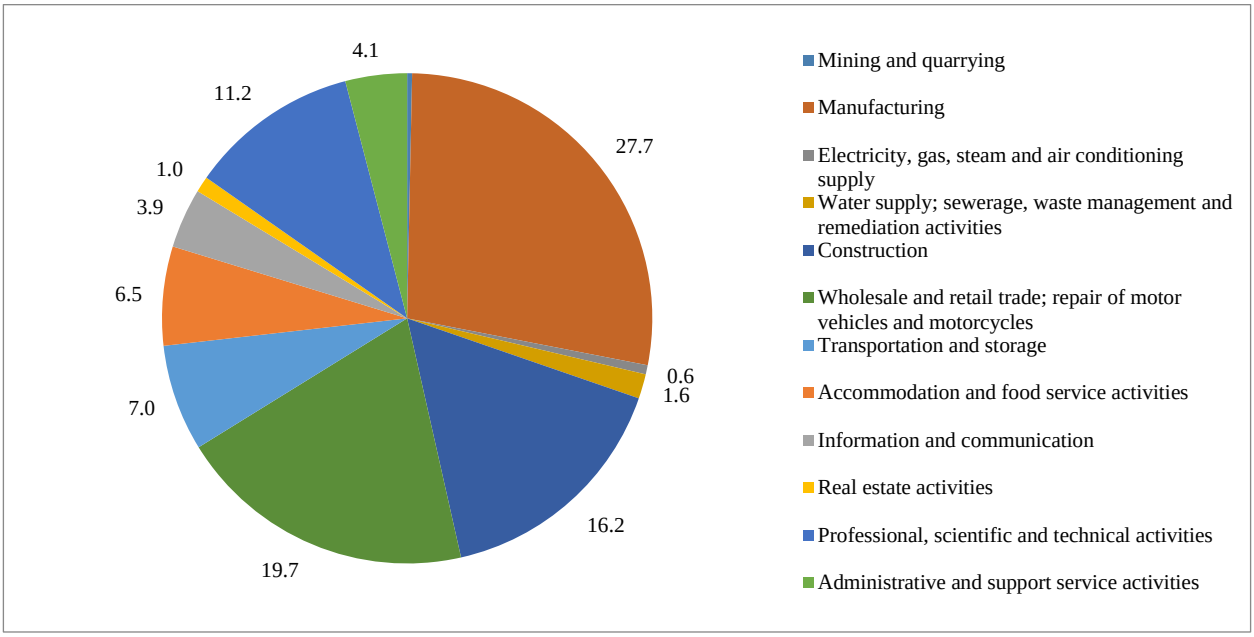


Figure 4 shows a breakdown of SMEs contribution to employment in Slovenia by industry. The subsectors with the highest contribution to employment are manufacturing, construction, trade, and professional, scientific, and technical activities.

Figure 4. Employment in SMEs by industry type, Slovenia 2014, in %



3 SMES' FINANCING PATTERNS

3.1 Typical SMEs' financing

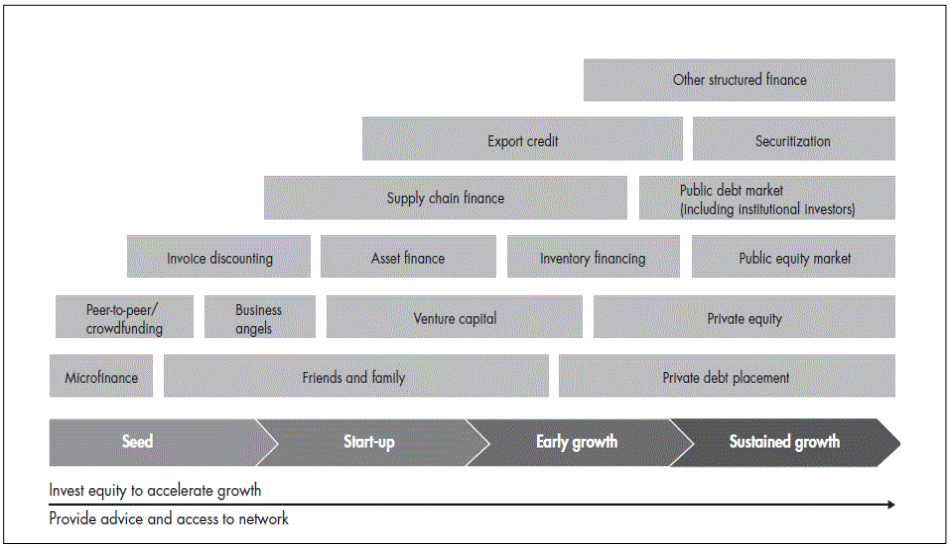
SMEs' financing consists of both internal and external sources. According to Urh (2001), the most commonly used external financial sources in SMEs are:

- Equity capital in the form of investments from business angels, venture capital, proceeds from IPO or closed stock offerings;
- Debt capital such as bank loans, extension of the terms of trade, leasing, factoring, loans among related entities, issuance of debt instruments;
- Sources from government funds and government subsidies;
- Sources from European development institutions, such as EIB and EBRD, and structural funds;
- Sources from international development institutions, such as the WB and IBRD.

Internal financing is also an important source of finance, as it provides some sort of financial safety or buffer against losses. More specifically, equity capital is an important source, as it symbolizes the solvency and ability of borrowers to partially repay their debts, in case the company ceases to exist. The most commonly observed internal sources of financing are owners' equity capital, capital invested by the owners' families and friends, retained earnings, and alternative sources (Urh, 2001).

Figure 5 shows an overview of the evolution of financing sources in small firms.

Figure 5. Financing escalator



Source: Tran, H., & Ott, J. *Restoring financing and growth in Europe's SMEs*, 2013, p.33.

However, the acquisition and distribution of each internal and external type of sources is different from the acquisition and distribution of funds in a large firm. Glas, Drnovšek, Mirtič, & Pšeničny (2002) conclude that SMEs' financing significantly differs from the financing patterns observed in large companies, due to the many specificities of such firms. SMEs have different needs for financing, depending on the stage of their development, and thereby level of risk inherent in their operations. For example, at the early stages, commercial banks are reluctant to provide funds to SMEs, due to the many uncertainties, information asymmetries, cost of screening, and conducting due diligence and the general higher level of risk.

There is therefore a need for alternative sources of funds, such as venture capital or business angels' investments, microcredit schemes, bank guarantees or government grants (refer to figure 5). The methods of financing vary even more, depending on the stage of development, although bank loans continue being the predominant method of securing external sources. In addition, the financing needs of SMEs change in accordance to the stages of their experience, stronger relationships with

suppliers and lenders, the value of collateralized assets, and their overall creditworthiness (Berger & Udell, 1998; Berger & Udell, 2006).

As can be seen from the picture, at initiation, small and less transparent firms rely exclusively on internal sources, such as owners' equity capital, microloans, or loans from family and friends. Venture capital and business angels' investments represent the second tier of initial external financing, especially for high risk – high growth potential firms (OECD, 2006). Due to the high information asymmetries at initiation, banks are less willing to extend loans at the beginning. The fact that SMEs do not possess many valuable assets that could be used as collateral, makes it even more complicated for banks to provide funds. Beck, Demirgüç-Kunt, & Pería (2008) show that despite their perception of SMEs sector as highly profitable, banks are less exposed to small firms.

In addition to the above mentioned intrinsic factors, they find out that banks consider the general macroeconomic instabilities in transition countries and the competition in developed countries as additional obstacles to providing funds to SMEs, implying that the lending environment is more important than the size of the firm. Therefore, the main source of funding in the initial stages is from internal funds and retained earnings. After some time of acquired experience, the firm becomes more transparent, is more capable of presenting viable financial statements and possesses more assets that could be used for collateral, eventually leading banks to extend more loans. Moreover, growth enables accumulation of more internal equity capital as well as more access to external debt financing.

Beck, Demirguc-Kunt, & Maksimovic (2008) have investigated the impact of financial and institutional development on financing patterns of large firms and SMEs in 48 countries. Their results show that small firms use less external finance, especially in countries with less developed institutions. Small firms also use less alternative sources such as leasing, trade finance, development and informal finance, meaning that there is no suitable compensation for the lack of traditional bank funds. Small firms also do not expand external financing when financially constrained, which additionally implies that there are limits to the access to external financing.

3.2 SMEs financing challenges and impediments

Securing sufficient and adequate financing is one of the major obstacles for SMEs, as is confirmed by numerous studies (Beck & Demirgüç-Kunt, 2006; Berger & Udell, 2006; OECD, 2006). A study about the impact of institutions on firms' access to finance, using data from the World Bank Enterprise Survey and including 10,000 firms in 80 countries, has uncovered that 39% of small companies, 38% of medium-sized, and 29% of large companies are likely to identify access to finance as one of the major obstacles (Beck, Demirguc-Kunt, Laeven, & Maksimovic, 2006).

In a more recent study, using the same methodology from an updated data set from the World Bank Enterprise Survey, covering numerous aspects of the business environment for companies in 98 countries, the authors have identified the biggest obstacles faced by firms worldwide. Out of all the 15 potential obstacles, accesses to electricity and finance have been identified as the major challenges for most of the firms. In line with previous research, within SMEs category small firms have been more prone to identify access to finance as an obstacle than medium firms (Kushnir, Mirmulstein, & Ramalho, 2010).

When conducted in Slovenia in 2013, on a sample of 270 companies from the manufacturing, retail, and services sectors, the same survey uncovers access to finance as the second biggest obstacle as well. Namely, 18.2% of all surveyed companies, i.e. owners or managers, have identified access to finance as the second largest impediment, preceded by high tax rates as the largest obstacle, according to 19.7% of the surveyed (The World Bank/ International Finance Corporation, 2013). Moreover, Berger & Udell (2006) identify the rules and conditions defined by financial institutions as decisive factors in the availability of external finance. They argue that the availability of funds to SMEs is affected by the structure of financial institutions and their lending structure, which influence the feasibility of different lending methods developed for the SMEs sector.

A recent study on the financial health of the European SMEs, concentrating on six EU Member States, namely France, Italy, Ireland, Spain, Portugal, and the Netherlands has uncovered several general impediments that prevent SMEs from reaching their growth potential. The authors identify numerous challenges preventing SMEs from becoming the driving force of the upturn, such as the unattractive business environment, declining competitiveness due to increasing unit labor costs, the problems of stagnating or declining demand due to the continuous political and economic instabilities and the inability to acquire sufficient financial sources, in the form of both loans and equity capital. The last issue should raise more concerns, due to the many complexities hidden behind the different factors leading to the problem, both evident and less evident (Tran & Ott, 2013).

The first identified problem revolves around the issue of gathering proper information about the creditworthiness and growth potential of SMEs, due to the fact that it is too costly and difficult to obtain. During the crisis, firms have shifted their financing priorities from investments in long term projects to financing short term working capital, which requires more complex and time-sensitive evaluation of the client, making traditional information gathering tools ineffective.

As banks are committed to cutting cost, centralizing loan decisions and reducing branches and frontline staff who have built relationships with clients, valuable firm-specific information is lost. This makes the process of building new bank-borrower relationships more difficult. Problems in collecting, storing, analyzing, and timely disseminating information create additional challenges

for funds providers. This disables the provider of funds to monitor the firm, follow progression and have means to oblige the borrower to respect the initial contract (Tran & Ott, 2013).

The profitability and growth of SMEs vary more and earnings are more volatile than in the case of larger, stable firms. The survival rate of SMEs is also lower than that of large firms. In SMEs, it is often difficult to make a distinction among the owner and manager, evaluate the assets as belonging to the owner or the firm, which makes it difficult to analyze the financial situation of the company. In addition, SMEs do not follow recognized corporate governance standards, they rather reflect the personalities of their owners. SMEs are also more likely to obtain funds from the informal sector and are therefore less linked to formal debt and equity markets, as they often use either internally generated funds or funds from family and friends, which are usually obtained at below market level interest rates.

There are also potential principal/agent problems, seen through the moral hazard present in the choice of risky projects in all lending activities. However, this is exacerbated in the case of SMEs, due to difficulty distinguishing among the owner and manager, the presence of information asymmetries and the complexities of the business model, despite the seeming simplicity (OECD, 2006)[3].

Inadequate financial literacy is yet another problem, as many SMEs' owners and managers do not possess the relevant skills and knowledge to develop a reliable business plan. In an environment where the market for the third party providers of financial information and analyses is still underdeveloped, banks are not left with many viable information gathering alternatives, which causes information provided to be out of date and unreliable. Eventually, this makes it challenging for banks to provide enough short term loans, since the net interest margins may be insufficient to cover the fixed cost required for conducting due diligence.

In recent interviews, bank officials have also stated that the collateral requirements for SMEs have become more stringent, loan to value ratios on real estate have declined, while the number of larger personal guarantees has increased (Tran & Ott, 2013). SMEs traditionally own less assets to be utilized as collateral, have short or inadequate credit histories due to underdeveloped borrower-bank relationships, generate small cash flows, and face high transaction costs, which makes it even more difficult for them to prove their creditworthiness to loan suppliers. They are thereby exposed to higher risk premiums, beyond the premium charged for insufficient information, implying that commercial bank financing is not as readily available for SMEs and the terms of acquiring credit are less attractive (International Finance Corporation, 2010).

[3]The owner of an SME is less likely to have proper management training and develop sophisticated business plans. However, they develop simple business plans that suit their needs, which might not be understood by loan officers. The owner/manager also has more practical training in operating in an uncertain environment. Hence, it might be difficult for loan providers to grasp whether the owner is behaving in a financially irresponsible way, or just doing day-to-day business, which increases the opacity of the borrowing procedure.

Another challenge for reinvigorating SMEs' financial health arises from the fact that SMEs are exposed to many disincentives to achieving greater scale. SMEs have been hardly hit by the recent crisis, due to both its severity and duration, as well as the structural problems that were exposed during this period, caused mostly by the declining domestic demand and cuts in government expenditures. The exclusive focus on domestic markets, lack of scale and financial sophistication as well as numerous regulatory burdens has further made it difficult for SMEs to respond to the crisis. Conversely, focus on export markets, diversification and larger scale could enable SMEs to build expertise, conquer new markets, and join global supply chains and become more immune to economic cycles and crises (Tran & Ott, 2013).

Government policies also affect SMEs' growth potential in a less favorable way. For example, tax, consumer and investor protection, workplace safety, and healthcare policies can create challenges for growth and investments as they lead to creating unintended thresholds making effective tax rates, labor costs, and other social commitments higher, audits more likely and subsidies less available. Therefore, well intended government regulations create additional burdens for SMEs, making it difficult even for financially sound firms difficult to access finance. The specificity of the industry in which firms operate can also have adverse effects on the financial health of some SMEs.

During the crisis, some firms were more affected than other, i.e. those in construction, real estate, and hospitality sectors, even more so if the firms operated solely in the domestic markets. This has led to a significant number of liquidations and bankruptcies, due to the unfavorable legislation in many EU countries, which does not allow for proper financial restructuring of unsustainable debt, recapitalization and investments in more productive projects (Tran & Ott, 2013).

Less developed legal, institutional and regulatory framework are an additional burden for the bank-borrower relationship. Unless the tax and regulatory frameworks are transparent, accompanied by a legal system, which has a strong regime for protecting property and creditor rights, and has proven efficient in resolving delinquent payments and bankruptcies, banks will not be incentivized to develop a sound market for SMEs.

In addition, and especially in less developed countries characterized with less open and deregulated markets, inadequate business environment and insufficient structural reforms, there is a greater likelihood of macroeconomic imbalances that lead to excess demand for domestic savings.

In countries with low national savings, there is a tendency for excess demand for domestic savings to exist. Some countries have private monopolies which create additional market imperfections. Other government might pursue an export oriented economic policy or industrialization, favoring large exporter companies, thereby leaving a large share of SMEs segment underserved. Besides being unable to obtain sources from the formal financial sectors, SMEs in emerging markets tend to get involved in informal and low productivity activities.

SMEs, being more severely affected by the macroeconomic condition, will refer to the informal financial system for obtaining the necessary funds. This will additionally decrease their level of financial sophistication, incentive to report credible accounts and work transparently. In countries with rigid tax and regulatory frameworks, SMEs would prefer remaining in the informal sector. Eventually, the effect would be negative, as banks would be even more reluctant to lend funds to SMEs (OECD, 2006).

Therefore, in order to tackle the structural problems, regain financial health, and enable easier access to financing, there is a necessity for more favorable regulatory, legal, accounting, auditing, and tax rules, as well as less administrative burdens with which to create incentive for achieving greater scale. Actions to support exports and expansions are also required, in addition to measures needed to enhance SMEs' financial health, such as an enforced legislation on late payments, promotion of best practices to serve as examples, support from public funds and increased access to equity finance and a reformed bankruptcy law which could prevent unnecessary losses of value during liquidations.

A recent study confirms the above mentioned, since the level of development of the financial and legal system, significantly affects SMEs in countries with underdeveloped financial and legal systems, leading them to face greater financing constraints and hence, use less external finance (Beck, Demirgüç-Kunt, & Maksimovic, 2008).

Financing constraints also arise from the lower inclination of banks to withstand credit risk, in comparison to the pre-crisis period. Due to deleveraging, regulations forcing banks to strengthen capital bases and rebuild profitability, and increased risk aversion, banks have lowered their supply of credit to firms. This is even more so in countries with more troubled banking sectors, weaker economic performance and countries with ineffective instruments for financial restructuring of unsustainable debt. In order to decrease the dependency on banks' capacity to provide funds, there is a need for easily accessible markets for alternative financial sources, such as equity, which is yet another challenge for SMEs, due to the aforementioned problems.

For example, the tax laws in many EU countries are more inclined to debt rather than equity financing, while the high fixed costs in acquiring firm specific information about the creditworthiness and growth potential, restrict the development of alternative sources (Tran & Ott, 2013). A survey of OECD countries has uncovered the fact that although banks and investors provide an array of financial products, even experienced and specialized entrepreneurs do not choose alternative products, since they lack sufficient information and knowledge about alternative means of financing. Moreover, many SMEs in numerous OECD countries do not tend to use equity finance and prefer capital structure which relies excessively on debt financing.

The rationale for this behavior is found in the fact that owners of SMEs fear dilution of their ownership structures and prefer not to share ownership with outside investors. The fiscal policies

subsidizing debt financing, the lack of developed markets for corporate control, and institutional investors additionally motivate owners to use debt financing.

Moreover, the lack of government policies that promote alliances and foreign partnerships due to barriers to foreign direct investments, especially in the above mentioned, less open and less deregulated markets, present additional burdens to the ability of SMEs to acquire alternative financial sources. Hence, the existence of alternative financing sources requires examination and adaptation of the regulatory, legal, accounting and auditing, tax rules, as well as alignment of incentives among SMEs and the funds' providers (OECD, 2006).

3.3 Access to alternative financing instruments for SMEs

Insufficient understanding of the alternative instruments by SMEs, financial institutions, and governments represents a barrier for their utilization, creating a knowledge gap alongside the financing gap. Hence, newer studies have tackled this problem by presenting the existing available financing sources and assessing their potential to serve the distinctive requirements of SMEs.

Table 3 presents the list of available alternative financing sources.

Table 3. Alternative financing instruments for SMEs

Low Risk/Return	**Low Risk/Return**	**Medium Risk/Return**	**High Risk/Return**
Asset-Based Finance	Alternative Debt	"Hybrid" Instruments	Equity Instruments
Asset based lending	Corporate Bonds	Subordinated Loans/Bonds	Private Equity
Factoring	Securitized Debt	Silent Participations	Venture Capital
Purchase Order Finance	Covered Bonds	Participating Loans	Business Angels
Warehouse Receipts	Private Placements	Profit Participation Rights	Specialized Platforms for Public Listings of SMEs
Leasing	Crowdfunding (debt)	Convertible Bonds	Crowdfunding (equity)
		Bonds with Warrants	
		Mezzanine Finance	

Source: OECD, *New Approaches to SME and Entrepreneurship Financing: Broadening the Range of Instruments*, 2015, p. 17.

Alternative financing instruments defer from traditional instruments in the domain of risk – return degrees and borrowers' characteristics. Traditional debt instruments are the most suitable for borrowers with moderate return preferences and low to moderate risk aversion. They are useful for

sustaining ordinary activities and short term financing needs of firms with stable cash flows and business models, modest growth and collateral (OECD, 2015).

Asset based finance refers to the provision of cash, based on the value that a particular asset will generate in the future course of the business, and disregards the credit standing of the company. The main distinction among asset based lending and traditional lending instruments arises from the relationships between the assets' liquidation values and the borrowed amounts, whereby the loan amount and credit conditions depend on the creditworthiness of the company. Asset based lending also allows more flexible terms in comparison to traditional lending (OECD, 2015).

Alternative debt financing instruments such as corporate or covered bonds and securitized debt, whereby capital markets investors provide the funds, might be considered innovative in the realm of SMEs' financings, due to the lack of frequent applicability. Corporate bonds represent direct forms of financing, while covered bonds or securitized debt are indirect instruments, as the underlying instruments granted to the company are loans. SMEs' debt securitization, conducted by the sale of SMEs' loans to specialized companies, which produce new securities connected to SMEs' cash flows, enables the transfer of credit risks from banks to capital markets and enhances SMEs' debt capacity. Corporate bonds have been less popular financing instruments due to the difficulty in adhering to investor protection regulations and the high issue costs, while securitized debt instruments have been widely used during the last 10 years (OECD, 2015).

Hybrid instruments represent a mixture of traditional debt and equity instruments, the differences of which arise from the risk – return degrees. The main characteristic of these instruments is the risk – reward sharing among borrowers and investors. The investors assume higher risks and therefore expect higher returns, implying higher cost of financing for the firm. The risk – return relationship is not equivalent as in the cases of equity financing, as the risk and expected return levels are somewhat lower (OECD, 2015).

There are numerous instruments such as seeds and early stage equity finance useful for growth and development, as well as specialized platforms for SMEs' public listings, suitable for financing growth opportunities. However, acquiring equity capital for SMEs might be less advantageous than debt capital, as the process of accessing stock markets through an IPO tends to be more expensive for SMEs than for large companies, due to the fixed costs arising from due diligence, distribution, and securities registration. Moreover, SMEs' owners may be less inclined to initiate an IPO, due to the threat of underpricing and loss of ownership dilution and control in capital markets (OECD, 2015).

Moreover, some of the most innovative types of instruments are crowd-funding and peer-to-peer lending. Crowd-funding and peer-to-peer lending, represent a form of loan transactions without the intermediation of financial institutions, where individual customers borrow or lend money via unsecured personal loans. The transactions are direct and involve personal contact, transparent

exchange of information that is visible to current and future borrows and may thus externalize to a larger creditor base. The use of these alternative instruments has been increasing in numerous countries, which has been attracting investors, regulators, and policy makers' attention, striving to assess risk-return awareness, transparency and consumer protection (OECD, 2015).

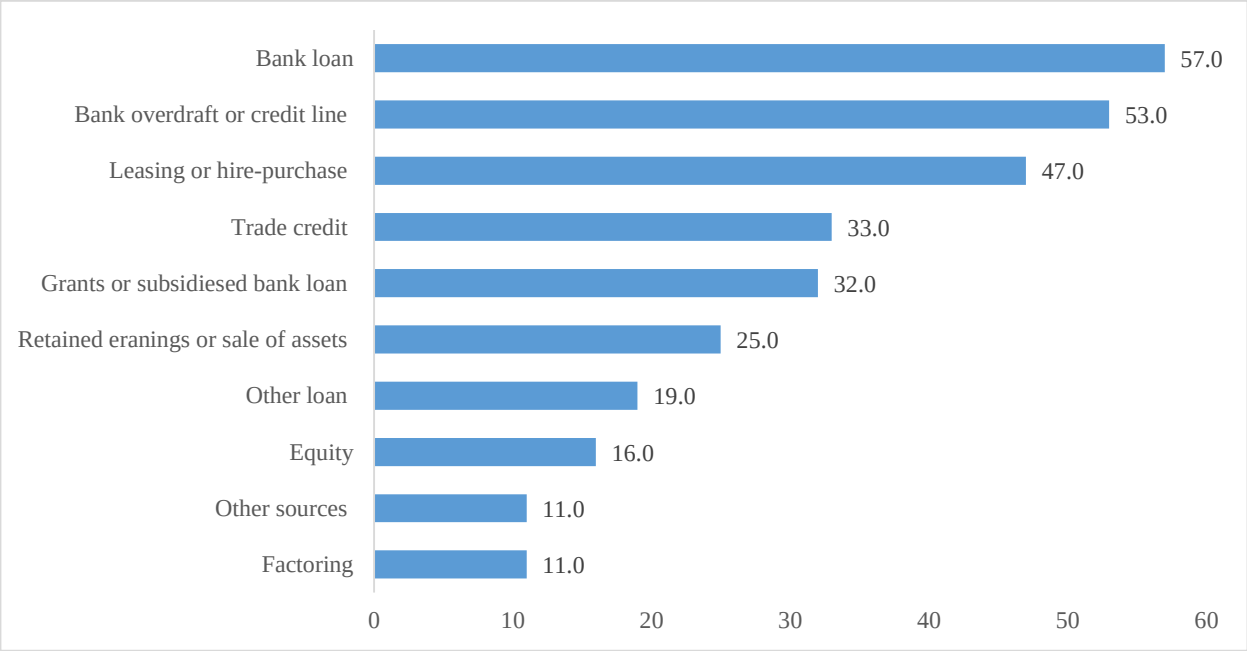
3.4 Recent developments

According to the Survey on the Access to Finance of Small and Medium-sized Enterprises (SAFE), conducted in 2014 by the European Central Bank and the European Commission, alternative funding sources, such as leasing or hire-purchases have been frequently used by SMEs. Approximately half of the survey respondents (47%) have confirmed the use of asset-based instruments or expressed a consideration of using them in the future. This is corresponding to the use of bank overdrafts or credit lines, while traditional bank loans have remained the dominant source of external financing for SMEs. In addition, 33% of the survey participants have stated that trade credit has been considered as one of the main external financing sources in the EU. A rather small share of the participants, namely 16%, have chosen equity as a source of financing, whereas 25% have opted for internal financing in the form of retained earnings or proceeds from assets' disposal (OECD, 2015).

The main challenges for SMEs in the EU uncovered by the new SAFE survey, are acquisition of customers, identification of competitors, access to finance for micro SMEs, labor costs factors, lack of skilled employees, and regulation. In terms of the Slovenian SMEs, access to finance has remained the largest challenge, alongside regulation (Muller, et al., 2015).

Figure 6 presents the most frequently used types of financial sources, according to the respondents of the SAFE survey. As evident, traditional debt instruments have remained the dominant source of financing for SMEs.

Figure 6. Relevance of financing types for SMEs, EU−28, ECB/EC SAFE survey, 2014 in % firms



Source: OECD, *New Approaches to SME and Entrepreneurship Financing: Broadening the Range of Instruments*, 2015, p. 32

Access to finance in Slovenia has been tackled in the latest Small Business Act (SBA), where three financing measures have been proposed and adopted during 2014 and the first quarter of 2015. The first proposed measure has tackled the availability of cohesion policy programs and the European Agricultural Fund for Rural Development, for SMEs. A new governmental body, i.e. Office for Development and Cohesion Policy[4], has already been established to improve the usage of European cohesion funds (European Commission, 2015).

The second proposed measure has tackled advanced financing, according to which SMEs' access to the Structural Funds should be facilitated by allowing them to submit all data necessary for Structural Fund support only once. The goal of the EU program is to help organizations to finance their projects, as EU programs provide reimbursements of costs (European Commission, 2015).

The last measure regarding access to finance addresses Regional Development Programs. The proposed measure is aimed at supporting investments in equipment for SMEs located in three underdeveloped regions (i. Pomurje, ii. Maribor, iii. Hrastnik, Radeče, Trbovlje) (European Commission, 2015).

Other recent measures relating to SMEs in Slovenia refer to entrepreneurship promotion, including a campaign with numerous 36 actions in 4 pillars for improving the inclusion of the young

[4] SVRK - Službe Vlade Republike Slovenije za razvoj in evropsko kohezijsko politiko.

population, (up to 24 years of age), internationalization intended to help Slovenian SMEs (grant) in market research on international markets and support established Slovenian business clubs abroad, state aid and public procurement intended to provide easier access to public procurement tenders for SMEs, and environment aimed at supporting eco management and implementing eco standards in tourist establishments (European Commission, 2015).

Additional alternative financing sources for the Slovenian SMEs are made available by the Slovene Enterprise Fund (SEF) specialized in development of SMEs with financial incentives. The fund is a national financial institution, the purpose of which is to enable access to favorable financial sources:

- Start-up incentives;
- Seed capital;
- Venture capital;
- Microcredits;
- Guarantees for bank loans.

The SEF is focused on two groups of SMEs, namely SMEs 5+, representing SMEs older than 5 years and young innovative SMEs, younger than 12 months. Among the existing groups, SMEs 5+ receives most of the funds, i.e. 75%, whereas the young enterprises receive the remaining 25% (Slovene Enterprise Fund, 2016).

In 2015, the SEF signed a COSME agreement, supported by the European Fund for Strategic Investments (EFSI), with financial support by the European Commission. According to the COSME agreement, the SEF will be able to extend 180 million worth guarantees to more than 1,100 SMEs in Slovenia during the next 3 years. The guarantees serve as collateral for loans, which can be obtained from banks participating in the guarantee schemes. They include interest rate subsidies, enable easier and more affordable access to bank financing and require lower requirements or additional collateral. Hence, they are intended for business and development activities, innovation projects, global growth, promoting women entrepreneurship, and socially useful entrepreneurship (European Investment Fund, 2015).

Further developments in the field of alternative instruments and enabling access to financing for the Slovenian SMEs can be expected, as Slovenia still has not incorporated SME Initiative, which is currently operational only in Spain and Malta. SME Initiative represents joint financial instruments created by the EC and EIB Group aimed at stimulating financing for SMEs by providing partial risk covers for loan portfolios originated from commercial banks and securitization instruments.

The risk cover instrument is designed for risk sharing, by providing affordable loss protection capital relief to financial institutions, which in return, extend loans, provide leasing or guarantees

to SMEs at advantageous terms. It is funded by the European Structural and Investment Funds (ESIF), from the sources contributed by the Member States, and co-funded by the EU through COSME, Horizon 2020 and EIB Group sources (European Investment Fund, 2015).

4 CAPITAL STRUCTURE IN SMES

The financing patterns of SMEs, in terms of the choice and availability of financial sources, lead us to the discussion about an appropriate capital structure. The capital structure theory expands the discussions on financial policies and patterns, since it relates them to the value of the firm, thereby stressing the importance of firms' choices of financial sources. Capital structure refers to the choice of different financial sources a firm finds most appropriate to finance the acquisition of assets and consequent operations with.

Typically, firms are financed with either equity or debt capital. Equity represents a more long term source, given its infinite maturity, whereas debt can have both short and long term maturities, depending on the goals and investment policies of the firm. In addition, short term sources are preferred for financing short terms assets, while long term sources are more suitable for financing long term assets, according to the maturity matching principle.

Both types of sources are provided by investors who have claims on the cash flows of the firms. Debt holders usually have contracts, most typically in the form of bonds, which promise to pay fixed schedules and principal in the future in exchange for their present investment. Equity holders, on the other hand, provide retained earnings or buy rights offerings, such as internal equity provided by the existing shareholders, or purchase new shares, which symbolizes external equity provided by shareholders. They are compensated with the claims on the residual earnings of the firm in the future. Shareholders also have control over the investment decisions, in comparison to bondholders who have no direct control, besides the various indenture provisions that may constrain shareholders' decision making. In addition to the two basic types of claimants, there are also holders of callable or convertible bonds, leases, preferred stock, nonvoting stock, and warrants (Copeland, Weston, & Shastri, 2005).

The modern capital structure theory was initiated by the work of Modigliani & Miller, (1958) i.e. by the propositions presented in their seminal paper *The Cost of Capital, Corporation Finance and the Theory of Investment*, which examined the conditions under which capital structure is irrelevant for the value of the firm. The theorem, which paved the way to the development of further capital

structure theories, revolved around the assumption of perfect capital markets, with no personal or corporate taxes, no transaction costs, and asymmetric information.

Given these assumptions, their first proposition ascertained that "the market value of any firm is independent of its capital structure and is given by capitalizing its expected return at the rate appropriate to its class. That is, the average cost of capital to any firm is completely independent of its capital structure and is equal to the capitalization rate of a pure equity stream of its class" (Modigliani & Miller, 1958). Accordingly, there should be no discrepancies between the values of the firms' assets and the value of the securities which represent either debt or equity capital. The cash flows generated from its assets must be used to repay the claimholders of debt and equity securities.

Nevertheless, the cost of acquiring different sources of financing differs among the equity and debt classes. The cost of equity, i.e. the rate of return demanded by equity holders is higher than the cost of debt, due to the risks associated with holding debt, leading shareholders to demand additional compensation. "That is, the expected yield of a share of stock is equal to the appropriate capitalization rate for a pure equity stream in the class, plus a premium related to financial risk equal to the debt-to-equity ratio times the spread" (Modigliani & Miller, 1958).

This implies that levered firms will differ from unlevered only in terms of the risk, and thereby the higher required return on equity securities. The lower cost of cheaper debt capital will be therefore offset by the higher cost of equity, while there will be no impact on the value of the firm. This implies that changing the shares of debt or equity capital will not affect the value of the firm, which is incidentally the irrelevance argument of the Miller Modigliani's theorem.

When imperfections are included, the main irrelevance theorem is not significant. The presence of corporate and personal taxes changes the impact of debt on the value of the firm, since debt is positively related to the presence of corporate taxes. In the case of corporate taxes only, as debt financing increases, the value of the firm increases as well, due to the tax shield associated with interest payments, implying that the optimal capital structure is the one composed of almost debt only. When personal taxes are included, the optimal capital structure is targeted to meet the optimal corporate and personal tax rates of the firm and the recipient of the company's cash flows, respectively.

Personal taxes have an offsetting impact on the tax shield, as they lower the value of the available cash flows. In the original paper, Miller (1977) describes a setting with an equilibrium of aggregate demand and supply of corporate debt, where the personal income tax levied on the marginal corporate debt investor just offsets the savings from the corporate tax shield. Since the equilibrium is at the aggregate level, describing the total demand and supply for corporate debt, there is no

implication for debt policy at the firm level, leading to the irrelevance argument of the capital structure. There have been numerous extensions of the original capital structure theory, to account for the remaining market imperfections and other aspects omitted in the original seminal paper (Harris & Raviv, 1991).

5 ALTERNATIVE CAPITAL STRUCTURE THEORIES

When analyzing SMEs, however, none of these theories seem to reflect the actual capital structure choices, due to the different proprietary nature of doing business. In general, all businesses, regardless of the size, select their capital structure considering the cost, nature, and availability of the alternatives. In the case of SMEs, this choice remains a puzzle, as there is a deficient understanding of the way in which firms chose their financing structure. In a small firm, the level of debt and equity usually reflects the characteristics of the owner and its managers (Pettit & Singer, 1985).

The capital structure theory, therefore, does not always apply for financing decisions of private firms, where the dominant determinant of the acceptable amount of debt and equity reflects the owners' attitudes and appetite for risk, rather than a predetermined capital structure theory (OECD, 2006). Since there is a lack of normative theories and guidance for making capital structure decisions in the financial literature and the business community, it is only logical to expect the development of positive theories which might serve as descriptors and blueprints for companies' financing decisions.

The capital structure puzzle concept perfectly describes the shortage of explanations and research upon which to base conclusions about financing decisions of firms. Myers (1984), one of the proponents of one of the two innovative positive theories about capital structure stated that "we know very little about capital structure. We do not know how firms choose the debt, equity or hybrid securities they issue. We have only recently discovered that capital structure changes convey information to investors. There has been little if any research testing whether the relationship between financial leverage and investors' required returns is as the pure MM theory predicts. In general, we have inadequate understanding of corporate financing behavior, and of how that behavior affects security returns. We have accumulated many helpful insights into capital structure choice, starting with the most important one, MM's No Magic in Leverage Theorem (Proposition I). We have thought long and hard about what these insights imply for optimal capital structure. Many of us have translated these theories, or stories, of optimal capital structure into more or less definite advice to managers. But our theories don't seem to explain actual financing behavior, and

it seems presumptuous to advise firms on optimal capital structure when we are so far from explaining actual decisions" (Myers, 1984).

In light of this, two different ways of thinking about capital structure have emerged, namely a static trade-off theory and a pecking order theory, although their relevance for actual capital choice decisions remains ambiguous until the present day. The static trade-off theory concept describes the capital structure choices of firms which are assumed to have set a target debt-to-value ratio and are gradually moving towards it, in a way that resembles firms' dividend adjustments towards a target payout ratio. The pecking order theory, on the other hand, describes a setting in which the firm prefers internal to external financing, and debt to equity issuance, in case it issues new securities. In the traditional pecking order theory, the firm does not follow a predetermined debt-to-value ratio.

5.1 The Static Trade−Off Hypothesis

The static trade-off theory concept describes the capital structure choices of firms which are assumed to have set a target debt-to-value ratio and are gradually moving towards it, in a way that resembles firms' dividend adjustments towards a target payout ratio. According to this theory, the firm's optimal debt ratio is determined via a trade-off among the cost and benefits associated with leverage, holding assets, and investments plans constant. The firm balances the benefits from the tax shield on interest payment against the various costs of financial distress and bankruptcy. The capital structure will change, i.e. the firm will substitute debt for equity and vice versa, as long as the value of the firm is not maximized, i.e. as long as the costs and benefits of debt will not offset each other (Bradley, Jarrell, & Kim, 1984).

Without the presence of adjustment costs, each firm would easily approach its optimal ratio, which will incidentally be the observed debt ratio. However, since costs of adjustments exist in imperfect markets, there will be lags in adjusting the capital structure. Moreover, as there are many random events that influence the firms' specific adjustment costs, there will also be some cross sectional deviation among actual debt ratios of firms having the same target debt ratio.

The impact of the tax rate on the tax savings is also not straightforward, as there are several factors that affect the gains from borrowing, such as the different marginal tax rates faced by firms, the level of borrowing, the statutory tax rate, carryforwards etc. For example, a firm with unused carryforwards does not pay immediate taxes, meaning that even though it borrows, the impact of the tax shield gains will be only partial and small, as the firm first needs to clear out the previous carryforwards (Myers, 1984).

The costs of financial distress on the other hand, includes the administrative and legal costs associated with bankruptcy, alongside the agency costs, moral hazard, monitoring and reputational costs, which can diminish firm value even if formal bankruptcy is avoided. The cost of bankruptcy therefore impacts financing decisions in two ways. First, risky firms tend to borrow less. The market value of their assets is usually associated with higher variance, increasing the probability of default on debt claims. This implies that firms with "safer" assets tend to borrow more, or have greater debt capacity, before the expected cost of financial distress offset the gains from the tax shield.

In addition, firms with tangible assets in place, traded on active secondary markets, tend to borrow less than firms holding tangible assets or with valuable growth opportunities. The cost of financial distress will be therefore higher for firms holding specialized assets, due to the fact that potential value loss is another significant determinant of the bankruptcy cost and given that tangible assets and growth opportunities are more likely to be adversely affected by default than "safer", assets in place (Myers, 1984).

According to the static trade-off theory, managers seek an optimal capital structure. The static trade-off theory is typically tested with target adjustment models. A simple target adjustment model is one where changes in the debt ratio are explained by deviations of the current ratio from the target debt ratio. The deviations might be caused by random events, due to which managers would have to gradually bring back the optimal debt ratio. The optimal debt ratio is stable in cases where there is a mean reverting behavior. The optimal debt ratio can be estimated by multiplying the historical mean of the debt ratio of each firm by the total capital, in order to obtain an estimated target debt level. The target adjustment model depends on the net amount of debt issued.

Previous studies of the capital structure and the static trade-off theory have found evidence of industry effects on debt ratios, interpreted as evidence of optimal ratios. Leverage ratios have been negatively related to tangible assets, which have been approximated by the research and development expenditures. A negative relation between growth opportunities and debt ratios has been also evidenced. Tax loss carry forwards have also been negatively related to debt ratios. Other studies have provided more direct evidence that firms adjust toward a target debt ratio. According to a logit model, the probability of debt and equity issues depends on the deviation of the current ratio from the target, estimated as the observed average of the sample (Shyam-Sunder & Myers, 1999).

5.2 The Pecking Order Theory

According to the pecking order theory, firms prefer internal to external financing. Target dividend payout ratios are adjusted to the investment opportunities, even though dividends are sticky and

target payout ratios are slow to adjust to shifts in the valuable investment opportunities. Uncertainty regarding the investment opportunities, fluctuations in profitability, and sticky dividend policies, imply that the internally generated funds may not always suffice for the planned investment outlays.

If internally generated funds are less than required, firms first refer to their cash balance or marketable securities portfolio. Should there be a need for external financing, firms will issue the "safest" securities first i.e. they start with debt, followed by hybrid securities, such as convertible bonds, only to choose equity at last. Within this setting, there is no target capital structure, since there are two kinds of equity capital, internal and external. The first is at the top of the hierarchy, whereas the latter is at the bottom. Therefore, firms' observed ratios reflect their cumulative requirements for external financing (Myers, 1984;Myers &Majluf, 1984).

Moreover, the pecking order theory can be interpreted as a byproduct of the separation of ownership and control, according to which, managers avoid external financing which exposes them to the discipline of capital markets. Additional arguments supporting the pecking order theory, include facts, such as avoiding new issuance in order to avoid issue costs, or issuing debt only in order to avoid the higher costs of equity finance. However, issue costs are not at par with the costs and benefits of leverage discussed in the pecking order theory. Information asymmetries also lend support to the pecking order theory.

According to the MM Proposition I, information asymmetries should not exist in perfect capital markets, managers and investors should have the same information, making everyone equally equipped with information about which type of security to issue, hence the debt ratio should be of no significance to the value of the firm. However, with asymmetric information, managers are better equipped with intrinsic, firm specific information, and are therefore not indifferent to the type of securities they will issue to finance their projects with. Considering this, and the above stated separation of ownership and control, debt should be preferred to equity, confirming the existence of the pecking order theory in imperfect capital markets (Myers, 1984;Myers & Majluf, 1984).

Berger & Udell (1998) propose a dynamic model for the different financing needs of SMEs, where they argue that SMEs experience changing financing needs, depending on the availability of financing options and internal requirements for growth, the firms' age, size, and information transparency. The SME Financial Growth Cycle, indicates that firms use different financial sources in respect to the growth of the business. Newly established firms start with internal finance or funds from business angels. As the business grows, they tend to use venture capital first, then public equity. Some firms use trade credits or short term loans. During the later periods, firms turn to medium term notes, commercial paper or public debt.

In addition, internal finance is acquired from the owners' initial investment, private wealth, or cash flows generated by the business. At inception, many SMEs lack sufficient liquid assets for pursing growth opportunities, which leads SMEs to be dependent on the owners' wealth. The ability to obtain external financing is also constrained, due to the small size, inexperience, information asymmetries, and insufficient collateral. All of the above leads us to the main contribution of their work, i.e. the notion that firms' have different optimal capital structures depending on their growth and stage of development.

The impact of the static trade-off and the pecking order theories on SMEs capital structure decisions have been tested on numerous occasions, resulting in more researches confirming the presence of hierarchy of financing sources, rather than balancing among the costs and benefits of leverage. The pecking order theory is also more suitable for explaining the capital structure decisions in SMEs due to the presence of information asymmetries among insiders and outsiders, whereby the only debate revolves around the issue of obtaining funds at the most appropriate terms, implying that the cost of issuing new securities will be the main issue, rather than the trade-off of the costs and benefits associated with leverage (Mateev, Poutziouris, & Ivanov, 2013).

Zoppa & McMahon (2002) investigate whether the pecking order theory explains capital structure of small firms, from a panel of 871 Australian manufacturing SMEs, by examining the impact of profitability, enterprise growth, size and age, and other enterprise characteristics on financial leverage, represented by a short term and long term debt ratio and an aggregated total debt ratio. They find that the pecking order theory is pertinent to explaining capital structure choices.

Using a panel data methodology on a sample of 3,569 Spanish SMEs over a 10-year period, from 1995−2004, Lopez-Gracia & Sogorb-Mir (2008) test the validity of the pecking order and trade-off theories. They test both models separately and jointly and compare them with a nested behavioral model, used to asses which of the two theories best explains the capital structure. They test the impact of non-debt tax shields, growth opportunities, internal sources, size and age on the capital structure. They conclude that both theoretical models explain capital structure decisions, and find clear evidence of the pecking order theory, but place greater importance to the trade-off theory.

Bas, Muradoglu, & Phylaktis (2010) analyze capital structure and term maturity choices of small firms, using survey data from 24 developing economies, 48% of which are small, whereas 41 % are medium-sized firms. By concentrating on the determinants of the capital structure, such as asset tangibility, firm profitability and macroeconomic indicators, they find that firms' capital structure decisions follow a pecking order. In addition, small firms in developing countries tend to have lower leverage and debt maturities, due to the economic environment and the associated low growth income and growth rates.

In a more recent study, Mateev, Poutziouris, & Ivanov (2013) investigate the determinants of capital structure in SMEs in Central and Eastern Europe. By carrying out a panel data analysis on 3,175 SMEs from seven Central and Eastern European countries, for the years 2001−2005, they find strong support of the pecking order theory. They estimate a model on leverage ratio by using the cash flow ratio as an explanatory variable. In line with previous research, they also find evidence of a negative correlation between leverage and profitability and argue that the level of leverage depends on the firms' size and age.

They also confirm that the cash flow ratio is a strong determinant of leverage, even after controlling for growth opportunities, liquidity, revenue growth, and assets structure determinants, especially for medium-sized firms, implying that firm size is a crucial factor which influences external financing needs. Nevertheless, the pecking order theory has certain limitations when it comes to perfectly explaining the capital structure decisions of SMEs.

Holmes & Kent (1991) suggest that the implications of the pecking order theory are constrained when it comes to SMEs, due to the fact that SMEs do not have access to established equity markets and their owners/managers are highly averse to dilution of control and other ownership interests, unlike in large, listed firms, where the managers have limited, if any ownership and control and can therefore refer to more financing alternatives. This leads to a proposition for a modified pecking order theory, where the investments from the owners rank between internally generated funds and debt finance (Ang, 1991).

Serrasqueiro & Caetano (2015) assess capital structure in Portuguese SMEs by testing which theoretical model among the trade-off and the pecking order theory best explains financing decisions. The capital structure theories are tested with the LSDVC dynamic estimator on a sample of SMEs located in the interior region of Portugal and are covering the period from 1998 to 2005. The authors have chosen the effective tax rate, non-debt tax shields, growth opportunities, assets tangibility, profitability, size, age, and risk as independent variables and the total debt level as the dependent variable.

On the basis of the pecking order theory, a negative relationship is expected between profitability and debt, as more profitable firms have greater capacity to accumulate retained profits, leading to less needs for external finance. A positive relationship is expected between growth opportunities and debt, as firms with higher growth opportunities must undertake investment projects, which create greater needs for external financing. If internal sources are exhausted, firms prefer external debt rather than equity financing. According to the pecking order theory, the relationship between assets tangibility and the debt level is expected to be positive, since a higher level of tangible assets

increases the availability of collateral, thereby decreasing information asymmetry problems among SMEs' owners and creditors.

The impact of size on the debt levels is expected to be negative, as larger firm's size enables firms to accumulate earnings, implying lower requirements for debt. However, according to the proponent of the pecking order theory, larger firms' size leads to lower information asymmetry problems between managers and creditors, implying a positive relationship. Hence, the hypothesized relationship can be positive or negative. Firms' age is used as a proxy for financing behavior over the business life cycle. Older firms have a greater earnings retention capacity, thus do not require external financing, leading to a negative relationship between age and debt (Serrasqueiro & Caetano, 2015).

According to the trade-off theory, the effective tax rate is expected to be positively related to debt, stemming from the potential benefits of the debt tax shield. Other non-debt tax shields are expected to be negatively related to debt in SMEs, as deductions for depreciation and investment tax credits could substitute for the tax savings arising from debt. According to the trade-off theory, profitability is expected to be positively related to debt, due to the fact that the most profitable firms have higher debt capacities, which allows them to take advantage of the debt tax shield. Growth opportunities are expected to be negatively related to debt, as a consequence of the higher bankruptcy and agency costs characteristic for firms with expectations of high growth opportunities. Hence, firms with high growth opportunities may be less inclined to use debt as their first external financing alternative.

The trade-off theory predicts a positive relationship between asset tangibility and debt, as the pecking order theory. Larger firms are typically more diversified, which decreases the likelihood of bankruptcy and have less volatile profits, which makes them better suited to take advantage of debt tax shields. Hence, according to the trade-off theory, the relationship between firms' size and debt is positive. The relationship between age and debt in the context of the trade-off theory is positive, unlike the predictions of the pecking order theory, according to which older firms have better reputations and can obtain external financing at lower costs.

The trade-off theory predicts a negative relationship between risk and debt in SMEs, since higher risk leads to a greater probability of bankruptcy, leading firms to reduce their debt levels. The last assumption of the trade-off theory tested by the authors, is the adjustment of the debt level towards an optimal debt ratio. According to the trade-off theory, the optimal debt ratio is reached at the point where the tax benefits equal the bankruptcy and agency costs associated with debt. Even though firms can deviate towards the optimal debt, the associated adjustment costs will prevent them from making a complete adjustment, hence implying a partial debt level adjustment (Serrasqueiro & Caetano, 2015).

According to their results, SMEs adjust their actual debt towards the optimal level of debt and firms' size leads to a greater use of debt financings, which explains the trade-off theory. However, older and more profitable SMEs use less debt, but increase their debt level depending on their size, which is consistent with the pecking order theory. Therefore, the study confirms the explanatory power of both theories regarding capital structure decisions (Serrasqueiro & Caetano, 2015).

An extension of the pecking order theory includes behavioral explanations, in order to account for SMEs managers' bounded rationality and dependence on intuition. On a sample of 899 privately owned European SMEs, from the manufacturing, wholesale and retail industries, studied over a 10-year period dating from 1993-2002, Swinnen, Voordeckers, & Vandemaele (2005) test whether behavioral models have greater explanatory powers in comparison to the static trade-off and pecking order theoretical models.

They use several partial models with which they test the contradictions between the proposed theories and the behavioral model. The static trade-off theory is tested with two dependent variables, namely target total debt and long term financial debt ratio, calculated as debt over total assets. The authors have used fitted values of the regression on the variables assumed to explain target leverage, as proxies for the debt ratios. The explanatory variables have been chosen from a set of variables from previous work on capital structure.

Previous studies have examined large, wealth maximizing public firms, while small firms have been rarely tested, due to the assumption that small firms follow the same management patterns as large firms and data is not available. More recent studies have assessed capital structure in small firms through the determinants such as assets structure, firm size, growth opportunities, and profitability. The authors have used the same set of explanatory variables, whereby the proxy for asset structure is the ratio of tangible fixed assets to total assets, the proxy for firms' size is the natural logarithm of total assets, the proxy for growth opportunities is the ratio of tangible assets to total assets and the proxy for profitability is the ratio of pre-tax profits to total assets for a two years period (Swinnen, Voordeckers, & Vandemaele, 2005).

The pecking order theory is also tested with two dependent variables, the target total debt and long term financial ratio. The explanatory variable is the free cash flow, used to assess if the internal cash flows of the firm suffice for real investments. A target adjustment model characterized by bounded rationality and intuition is used to assess whether the behavioral principle is the dominant explanatory model of the financing behavior in SMEs. The behavioral model arises as a consequence of the bounded rationality concept, i.e. limited rationality principle suitable for small firms. Bounded rationality is useful for explaining the complex, unstable, and unpredictable business environment where managers are facing information, time, and cognitive constraints, due

to which the decision making procedure deviates from rationality (Swinnen, Voordeckers, & Vandemaele, 2005).

According to the limited rationality concept, managers of small firms simplify the decision making process due to their insufficient understanding of the available financial sources and alternatives as well as accessibility. Hence, they seek some reference points, such as similar firms for guidance. In light of this concept, firms could use industry averages as target financial debt ratios, instead of considering an optimal debt ratio by a trade-off analysis among the costs and benefits of debt explained by the trade-off theory.

Industry averages are used as debt targets, due to the assumption that the optimal capital structure for firms in the same industry is approximately the same. Firms might also consider the industry average debt ratio as the optimal because banks typically use this ratio when assessing credit applications and firms' financial situation. The behavioral model uses the most recent industry averages as target values for the financial components. The industry averages are calculated as the total and long term financial debt ratio for all firms in a specific industry class and are used to test impact of financing behavior on firms' profitability (Swinnen, Voordeckers, & Vandemaele, 2005).

They find that the static trade-off theory does not outperform the explanatory power of the behavioral principle, since the industry debt target ratio is a better descriptor of the capital structure in comparison to the complex target debt ratios, obtained by balancing the costs and benefits of the leverage proposed by the static trade-off theory. The pecking order theory outperforms both approaches, as their results show clear evidence of increases or decreases in leverage, as a consequence of the lack of or availability of internal sources, respectively (Swinnen, Voordeckers, & Vandemaele, 2005).

According to Harrison & Widjaja (2013), the existing capital structure tests provide inconsistent results and do not tackle the impact of the changing economic environment and financial shock on capital structure. Previous studies have found that some firms choose a more conservative financing policy when confronted with the possibility of economic crises. Other studies have found that the financing policies of firms in financial distress adjust slowly and that firms prefer internal funds and bank credit, assuming future financing constraints.

Hence, by using panel data regression methodology, the authors try to assess the impact of three different capital structure theories on capital structure choice during the recent 2008 financial crisis, namely the trade-off theory, pecking order theory, and market timing theory. Their sample consists of the secondary data for 331 American non-financial listed companies in the S&P 500 index for the period extending from 2004 to 2007 and from 2008 to 2011, i.e. the periods before and after the crisis, respectively. The assumptions are tested with ratios derived from the total assets, total

current assets, book value per share, total long-term debt, total intangible assets, total liabilities, total current liabilities, total liabilities and stockholders' equity, sales, and total market value. The ratios used as independent variables are tangibility, firm size, profitability, liquidity, and the MTB ratio. The leverage ratio is the dependent variable and is used as a proxy for capital structure (Harrison & Widjaja, 2013).

According to their results, the statistically significant variables are tangibility, profitability and the MTB ratio. Tangibility and firms' size are positively correlated with leverage. Profitability, liquidity, and the MTB ratio are negatively correlated with leverage. The authors do not prove the dominance of any capital structure theory, but rather find evidence that the pecking order theory has more explanatory power than the other two theories, as the theory predicts the impact of three out of the five determinants, namely profitability, firms' size, and liquidity, whereas the trade-off and the market timing theories predict only one determinant. This is attributed to the higher information asymmetries during the 2008 financial crisis, which have caused the higher explanatory power of the pecking order theory (Harrison & Widjaja, 2013).

Reddy, Dinh, & Yahanpath (2016) assess the factors that have impacted capital structure decisions before and after the European sovereign debt crisis as well as the adjustments that the European non-financial sector SMEs have done to their capital structure during this period. The determinants of the capital structure are tested with a trend analysis and a panel data regression model on a sample of 2,448 firm year observations of 306 companies in 10 European countries during the period from 2006–2013. The 10 European countries are Belgium, Finland, France, Germany, Greece, Ireland, Italy, Portugal, Spain, and the UK. The countries have been split to non-stressed economies such as UK, France, Germany, Belgium, and Finland, and stressed economies including the remaining countries. The time period has been split to two periods, including the period prior the crisis, extending from 2006 to 2009 and the period after the crisis, from 2010 to 2013. The different time periods have been used to examine whether there has been a change in the capital structure and whether there has been a change in the determinants impacting capital structure decisions during and after the crisis.

The authors have used three types of independent factors tackling firms' characteristics, industry specific and country specific factors, such as macroeconomic factors, industry level, and firm level variables as independent variables, while SMEs' debt levels have been used as dependent variables.

The firms' characteristics factors have been used to test whether the European SMEs adjusted their capital structure during the debt crisis; the impact of profitability to the debt levels, which should be negative as firms earn high profits and prefer to retain them and consequently borrow less; the impact of size, which should also be negative, as SMEs have restricted access to external funding sources, unlike large firms which have more internal funds and have easier access to external

financing, such as equity instruments; assets tangibility which should be positively related to the debt levels as fixed assets can be used as collateral; the impact of companies' growth, which is expected to be negative, as reported by numerous studies; the impact of volatility on earnings, expected to be negative, as high earnings volatility leads to higher risk and higher probability of bankruptcy. According to previous studies, highly volatile companies are less indebted, which is in accordance with the pecking order theory, as the asymmetric information arising from the uncertainty regarding the future earnings tends to increase borrowing costs and lower their borrowing ability (Reddy, Dinh, & Yahanpath, 2016).

The industry specific factors have been used to assess how the debt ratio varies across industries. According to previous studies, the industry specific factor is expected to be positively related to the debt ratio. The country specific factors have been used to assess market conditions in different countries in order to assess macroeconomic stability required for the development of corporate bond markets and access to bank loans. Among the chosen factors, the authors assumed that the debt level is negatively related to GDP growth, government debt, and inflation.

According to their results, they confirm the adjustment of SMEs' capital structure during the crisis. Firms in financial distress have been slower to adjust their capital structure, compared to non-stressed firms. Moreover, stressed firms' debt levels have increased during the crisis, whereas non-stressed firms' debt levels have decreased during the same period. In addition, profitability has been an important determinant of stressed companies' SMEs capital structure during the period from 2010 to 2013, which is consistent with the pecking order theory. Firms' size has also been a significant determinant, however, for the period from 2006 to 2009 and for non-stressed countries' companies. Public debt levels have been negatively related to leverage, while inflation has been positively related during the whole period, for both stressed and non-stressed companies (Reddy, Dinh, & Yahanpath, 2016).

6 TESTING OF THE PECKING ORDER THEORY

6.1 Hypotheses

The following section contains the description of the test of the pecking order theory conducted on a random sample of 287 Slovenian SMEs. We first made inferences about the factors influencing the choice of capital structure, by examining the impact of several financial ratios on the short term, long term, and total leverage ratios.

The ratios were compiled from previous research and tests of the pecking order theory. Previous studies have focused on the total leverage ratio, representing total debt to total assets, as a descriptor of debt capital structure. In order to examine the differences arising from the different types of

leverage, we included three different types of leverage ratios, i.e. short term, long term, and total leverage ratios (Van Der Wijst & Thurik, 1993).

The cash flow ratio was the main variable of interest when testing the pecking order theory, as it tackled the internally generated funds used before issuing debt securities. According to the pecking order theory, the relation between the cash flow ratio and leverage is negative. By finding a statistically significant relationship, we expected to confirm the assumption that SMEs in Slovenia have failed to generate adequate amounts of cash flows, thereby proving that insufficient amounts of cash flows are positively related to the debt build-up and subsequently confirming the presence of a pecking order of financing sources. We hypothesized that this should be the case for all short term, long term, and total leverage ratios (Mateev, Poutziouris, & Ivanov, 2013).

H1: The cash flow ratio is negatively related to the leverage ratios.

The profit margins were used to assess whether companies have their costs under control, as they are a proxy for the cost structure and an indicator of how much of the revenue is actually kept as income. High profit margins are an indicator of a greater ability to generate internal funds, used for reinvestment and financing of growth opportunities. In terms of the above mentioned assumptions, the profit margins of SMEs were expected to be negatively related to the leverage ratios.

According to previous research, companies with more internal funds have been more profitable and have higher retained earnings than debt. In addition, debt can be used as a mechanism for restraining managerial discretion and ensuring that profits are paid to shareholders. In terms of capital structure, numerous studies have confirmed that there exists a negative relationship between profit and leverage. In Slovenia, during the observed crisis period, we were expecting lower profit margins due to decreasing demand and revenue generation. We hypothesized a negative relation between the profit margin and all leverage ratios, emphasizing the presence of a pecking order theory and simultaneously explaining the greater indebtedness of firms during the observed period (Chen, 2007).

By examining the return on assets as an alternative indicator of profitability, we assessed whether invested capital generates any additional earnings and whether the firms are effectively utilizing their available funds, i.e. whether they are investing properly. Under normal circumstances, assuming firms choose projects which yield sufficient returns and generate additional income, we expect positive and high values for the return on assets. In addition, this implies that firms are investing little capital but earning high incomes. In terms of the assumptions being tested in this thesis, a high ROA is accompanied by low levels of debt, i.e. more accumulated equity capital due to higher earnings, and vice versa.

In regard to the Slovenian SMEs, we were expecting low ROA values and higher leverage ratios. This is so since the denominator in ROA is composed of both debt and equity, meaning that increases in debt financing, followed by lower income generation due to the crisis, should cause lower ROA values. ROA used to test the pecking order theory was calculated as the ratio of net income to total assets, whereas previous studies have used ROA as the ratio of earnings before interest and taxes to total assets (Mateev, Poutziouris, & Ivanov, 2013).

H2: Profitability is negatively related to the leverage ratios.

The ratio of tangible to total assets was used to assess the impact of the assets structure on leverage. The ratio has been used in previous studies of the pecking order theory, as a control variable for firm's specific characteristics. The variable was used to assess the assets structure and to tackle the availability of collateral. Higher values of the ratios are expected to have a positive impact on leverage. Other studies of the pecking order theory, that have tested the impact of the ratio of tangible to total assets, hypothesizing that firms with more tangible assets borrow more, have also confirmed a positive relationship between tangible assets and leverage (Mateev, Poutziouris, & Ivanov, 2013; Chen, 2007).

H3: Higher value of the ratio of tangible to total assets is positively related to the leverage ratios.

Growth in annual revenues was used as a proxy for firm growth, which should be positively related to debt, as it implies greater debt capacity. Previous tests of the pecking order theory have used growth in operating revenues as a proxy for profitability, compound annual growth in sales, and simple growth in revenues, while others have used simple growth in revenues as an indicator of growth in SMEs that would lead to financing pressures which could be settled with, at least, short term debt financing (Zoppa & McMahon, 2002; Črnigoj & Mramor, 2009; Mateev, Poutziouris, & Ivanov, 2013).

H4: Growth in annual revenue is positively related to the leverage ratios.

The variable Size is used to differentiate among firms' size, i.e. micro, small and medium-sized companies.

The variable Time is a dummy variable, used to control for the impact of different time periods on leverage.

$$Leverage = \beta_1 + \beta_2 Cash\ flows_{it} + \beta_3 Profitability_{it} + \beta_4 Tangible\ assets_{it} + \beta_5 Growth_{it} + \beta_6 Size_{it} + DTime_{it} + e \quad (1)$$

6.2 Measurement of variables

Indebtedness:
LTL_{it}= Long term leverage
STL_{it}= Short term leverage
TL_{it}= Total leverage

Generated cash:
CF_{it}= Cash flow ratio

Profitability:
PM_{it}= Profit margin
ROA_{it}= Return on assets

Tangible assets:
TA_{it}= Tangible assets/Total assets

Growth:
REg_{it}= Growth in total revenue

Size:
$Size_{it}$= Size as per the Company Law definition

Time:
$Time_{it}$= Time dummy as per year

i = th cross-sectional unit, i = 1, ..., 287
t = th time period, t = 2006, ..., 2013

Table 4 shows the descriptions and definitions of the dependent and explanatory variables, expected signs and hypotheses.

Table 4. Dependent and explanatory variables

Variable		**Definition**	**Expected sign**	**Hypothesis**
Dependent variables				
Short term leverage ratio		$\frac{Short\ term\ debt}{Total\ assets}$		
Long term leverage ratio		$\frac{Long\ term\ debt}{Total\ assets}$		
Total leverage ratio		$\frac{Total\ debt}{Total\ assets}$		
Explanatory variables				
Cash flow ratio		$\frac{EBITDA}{Total\ assets}$	-	H1: The cash flow ratio is negatively related to the leverage ratios.
Profitability	Profit margin	$\frac{Net\ Income}{Total\ revenue}$	-	H2: The profit margin is negatively related to the leverage ratios.
	Return on assets	$\frac{Net\ Income}{Total\ assets}$	-	H2: The return on assets is negatively related to the leverage ratios.
Tangible assets/Total assets		*Tangible assets/Total assets*	+	H3: Higher value of the ratio of tangible to total assets is positively related to the leverage ratios.
Revenue growth		$(Revenue_t / Revenue_{t-1})$ -1	+	H4: Growth in annual revenue is positively related to the leverage ratios.
Size		*Size*		Variable used to control for size.
Time		*Time dummy*		Dummy variable used to control for time.

6.3 Methodology: Panel data regression model

The pecking order theory was tested with a panel data regression model, which was developed on the basis of previous work on the topic. Our test included three models which contained five variables and two variables controlling for size and time. A panel data regression model is used when tackling longitudinal data, whereby we are observing data over time for the same cross section. It is also useful when analyzing dynamic relationships.

Panel data is typically tackled with either fixed or random effects models. The fixed effects model is useful to analyze the impact of the descriptive variables that vary over time on the independent variable. The fixed effects model assumes that the unobserved effect is correlated with the explanatory variables. The random effects' model on the other hand, assumes zero correlation between the explanatory variables and the unobserved effect. The variation across the variables is uncorrelated with the explanatory or independent variables used in the model.

In order to determine which model is the preferred one, we conducted a Hausman's test. The main consideration when choosing between the random and fixed effects models is whether the unobserved effect is correlated with the explanatory variable. The Hausman's test is based on the difference between the random and fixed effects estimates. Since the fixed effects model is consistent when the unobserved effect and the explanatory variable are correlated, but the random effects' model is inconsistent, a statistically significant difference is interpreted as evidence against the random effects' model (Wooldridge, 2010).

6.4 Sample and data

All the data is secondary and refers to micro, small, and medium-sized Slovenian enterprises, covering the period from 2006–2013. The data was extracted from the data base GVIN, which provides annual financial statements for all registered Slovenian enterprises. The sample is random and consists of unbalanced panel data for the 287 SMEs.

The sample contains data for 111 micro companies, 103 small and 73 medium-sized companies, or 2296 firm year observations. The companies are from different industries, such as manufacturing, construction, real estate, financial services, consulting services, marketing services, holding services, engineering services, transport services, education services, telecommunications, retail, hotel and tourism services, and electricity. The companies were chosen randomly according to the revenue size criteria specified in the European Parliament and Council Directive for SMEs classification.

6.5 Descriptive results

The following table contains descriptive statistics for the sample of the Slovenian SMEs. The table contains data for the three dependent variables and the explanatory variables. All of the variables used in the panel data regression model were ratios, except for the revenue growth which was expressed in percentages.

Table 5 shows the descriptive statistics for the sample of the Slovenian SMEs for the period from 2006 to 2013.

Table 5. Sample descriptive statistics

Variables	**Obs.**	**Percentile**			**Mean**	**Std. Dev**	**Min.**	**Max.**
		50th	**75th**	**90th**				
Short term leverage ratio	2,296	0.05	0.15	0.31	0.11	0.15	0.00	0.93
Long term leverage ratio	2,296	0.08	0.27	0.51	0.17	0.22	0.00	1.05
Total leverage ratio	2,296	0.23	0.44	0.66	0.28	0.25	0.00	1.16
Cash flow ratio	2,296	0.08	0.14	0.21	0.10	0.09	(0.56)	0.95
Profit margin	2,294	0.05	0.11	0.25	0.08	0.26	(2.91)	3.71
Return on assets	2,296	0.03	0.07	0.12	0.04	0.07	(0.76)	0.73
Tangible to total assets ratio	2,274	0.39	0.62	0.81	0.41	0.28	0.00	2.20
Revenue growth	2,000	0.04	0.16	0.34	0.09	0.38	(1.00)	5.18

Figure 7 shows the movement in the average values of the three leverage ratios during the observed period from 2006 to 2013. The long term leverage ratio has been gradually increasing during the observed crisis period. However, the gradual decline in the average values of the short term leverage ratio has led to declining average values of the total leverage ratio.

Figure 7. Leverage ratios' average values

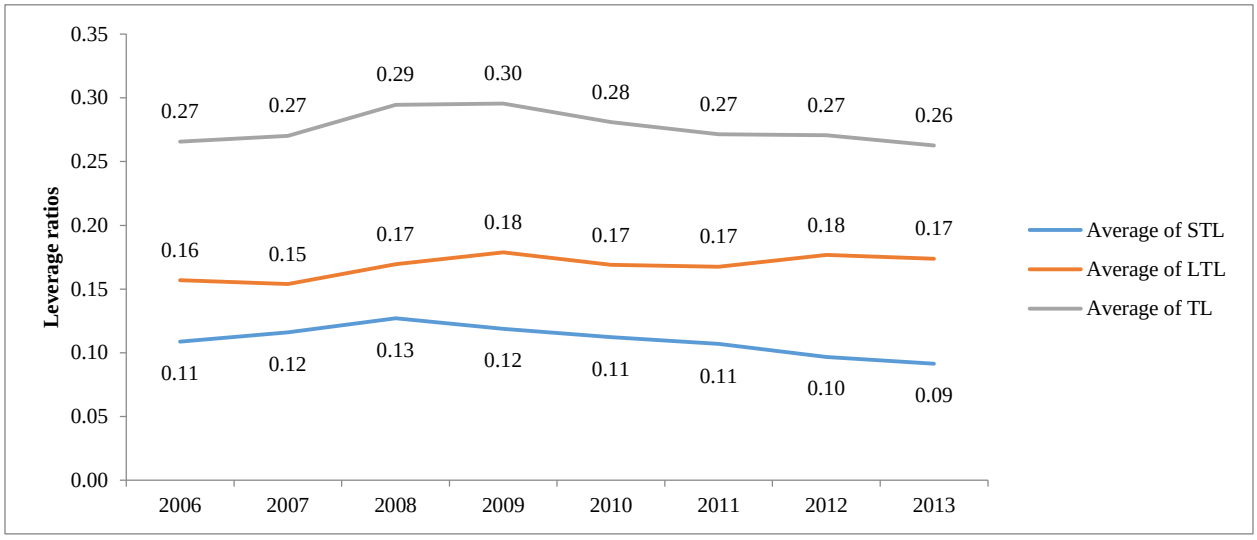


Figure 8 shows the movement in the average values of the cash flow ratio during the observed period from 2006 to 2013. The cash flow ratio has been gradually declining, which is in accordance with the assumption of inadequate levels of internally generated funds.

Figure 8. Cash flow ratio's average values

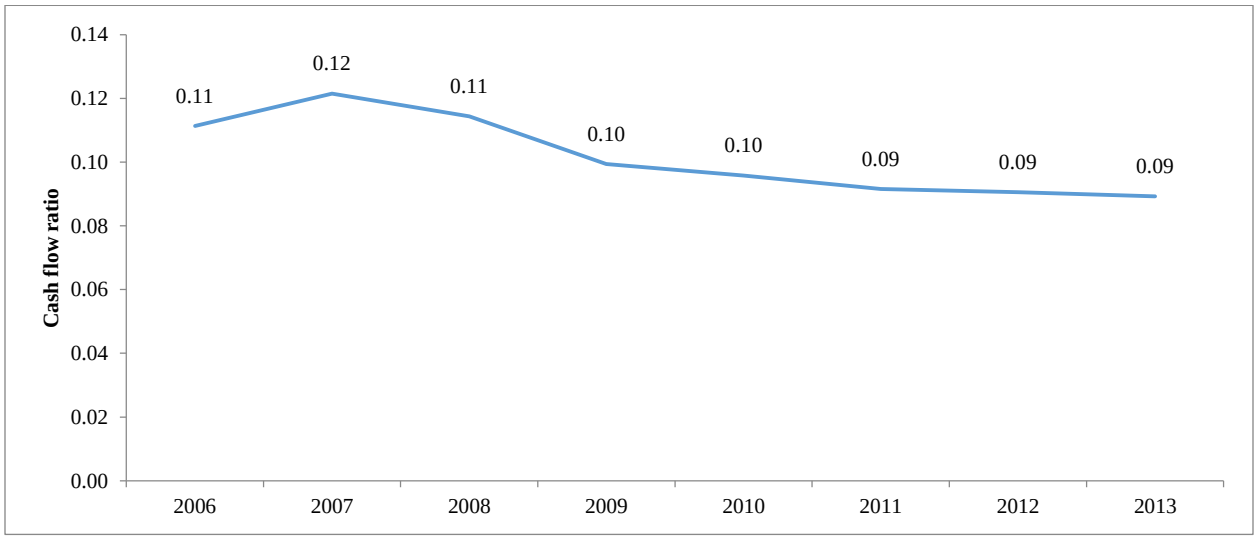


Figure 9 shows the movement in the average values of the profitability ratios PM and ROA during the observed period from 2006 to 2013. According to the data, the PM has been fluctuating, while ROA has been gradually declining.

Figure 9. Profitability ratios' average values

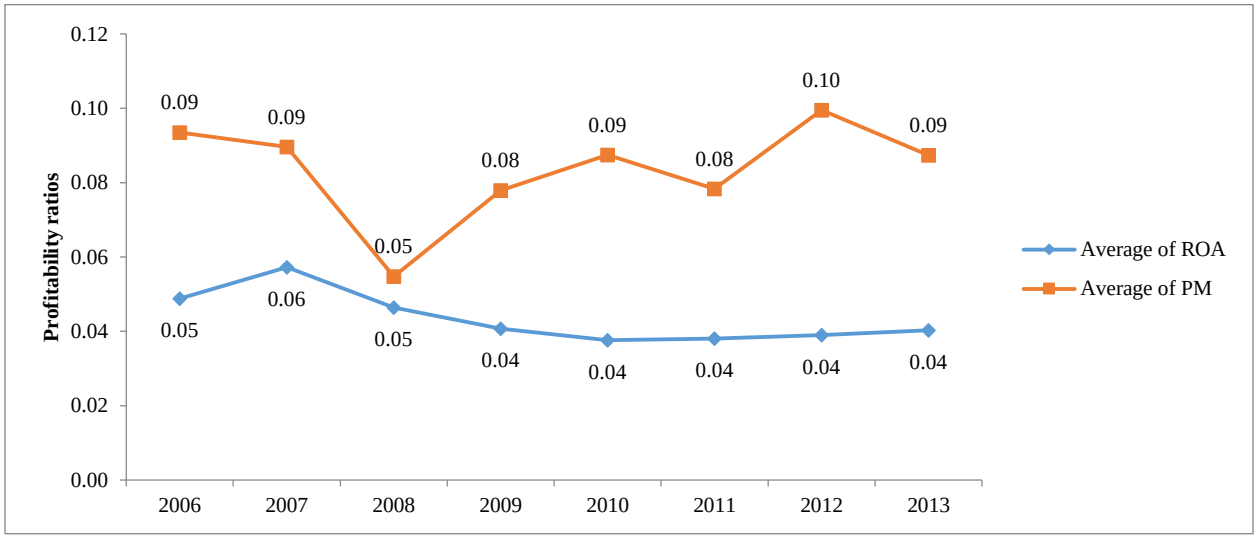


Figure 10 shows the movement in the average values of the ratio of tangible to total assets during the observed period from 2006 to 2013. The presented data shows that the values of the ratio have been increasing, especially since 2007.

Figure 10. Tangible to total assets ratio's average values

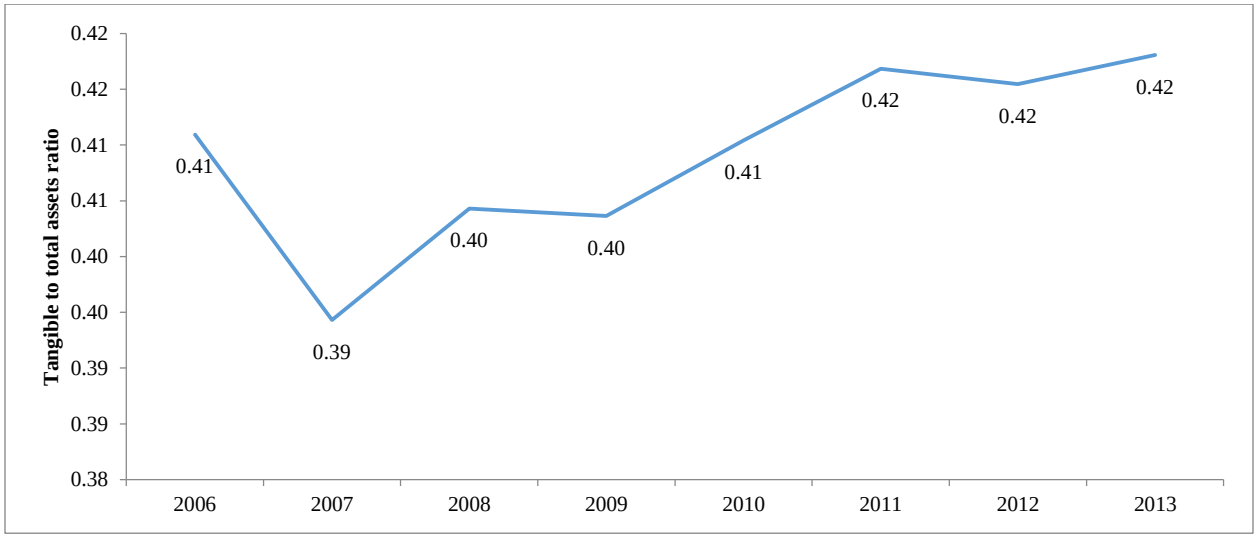
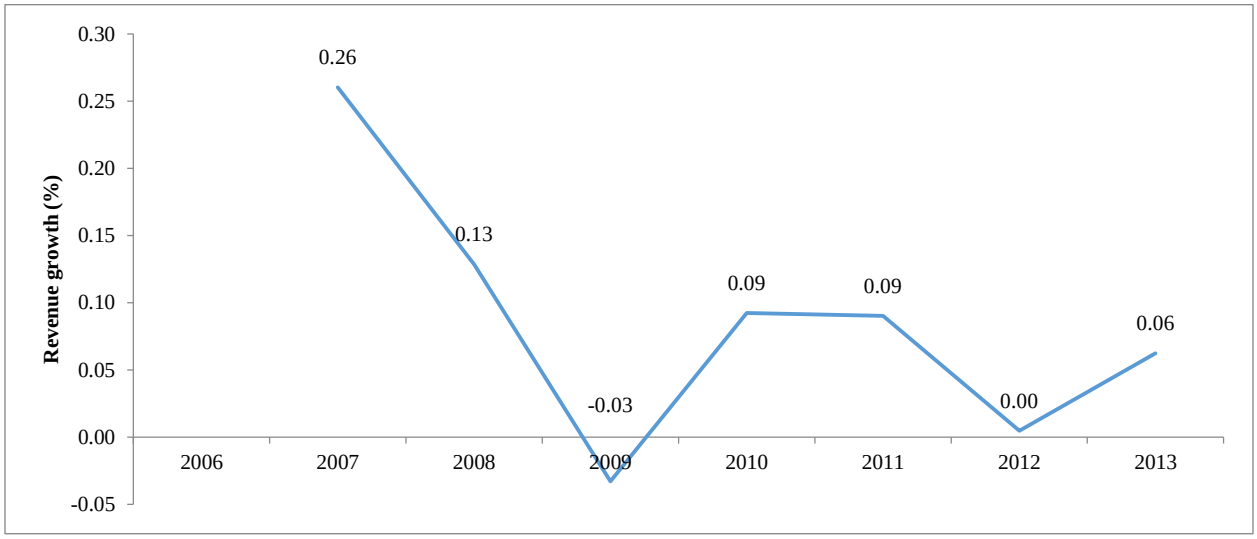


Figure 11 shows the movement in the average values of revenue growth during the observed period from 2006 to 2013. According to the presented data, the values have been fluctuating and gradually declining.

Figure 11. Revenue growth's average values



6.5.1 Correlation matrix

The correlation matrix is used to assess the pairwise correlations among the variables. The examination of the correlations among the variables was used as a test for multicollinearity.

Table 6 shows the correlation matrix, presenting the pairwise correlations between the explanatory variables and the three different leverage ratios.

Table 6. Correlation matrix

	STL	LTL	TL	CF	PM	ROA	TA	REg
STL	1.00							
LTL	-0.11*	1.00						
TL	0.52*	0.78*	1.00					
CF	-0.16*	-0.12*	-0.20*	1.00				
PM	-0.06*	-0.07*	-0.10*	0.18*	1.00			
ROA	-0.20*	-0.21*	-0.30*	0.84*	0.37*	1.00		
TA	-0.01	0.19*	0.15*	0.02	-0.15*	-0.15*	1.00	
REg	-0.01	0.03	0.02	0.14*	0.03	0.12*	0.05*	1.00

Significance level *p < 0.05

According to the correlation matrix, describing the pairwise correlations among the dependent variables and the explanatory variables, the CF ratio is negatively correlated with all three leverage ratios, which is in accordance with our hypothesis. In regard to the other ratios, the CF is positively correlated with the profitability ratios PM and ROA and revenue growth. The PM is negatively correlated with the three leverage ratios, as expected. In addition, the PM ratio is positively correlated with ROA and negatively correlated with the ratio of tangible to total assets. The ROA is negatively correlated with all three leverage ratios, as hypothesized. ROA is negatively correlated with the ratio of tangible to total assets and positively with revenue growth. The ratio TA is positively correlated only with the long term and total leverage ratios. The ratio is negatively correlated with the profitability ratios PM and ROA. TA is also positively correlated with revenue growth. The pairwise correlations between the revenue growth and the three leverage ratios are not statistically significant. However, revenue growth is positively correlated with the CF, ROA, and the TA ratio.

7 RESULTS OF THE MODEL ESTIMATION

The section contains the results of the models estimation accompanied by the appropriate discussion of each model, explaining the relations among the explanatory variables and the three dependent variables.

In order to assess whether the results obtained from the model could be used for analysis we observed the F-tests of all three models. The F-test was used to determine whether all the coefficients of the variables in the model are different than zero. The F-tests of all three models (Prob > F = 0.0000), were statistically significant, implying that all three models could be used for further analysis.

Table 7 shows the model estimation results of the test of the pecking order theory. It includes the dependent and explanatory variables of all three models, used to assess the impact of the financial ratios on leverage. It also includes the number of observations, R^2 values and level of significance.

Table 7. Model estimation results

Variables	**Short term leverage model**	**Long term leverage model**	**Total leverage model**
Cash flow ratio	-0.02	-0.20***	-0.24***
	(0.06)	(0.07)	(0.07)
Profit margin	0.02	-0.01	0.01
	(0.01)	(0.01)	(0.01)
ROA	-0.18**	-0.07	-0.23***
	(0.07)	(0.09)	(0.09)
Tangible to total assets	-0.00	0.19***	0.19***
	(0.02)	(0.02)	(0.02)
Revenue growth	-0.01	0.00	-0.00
	(0.01)	(0.01)	(0.01)
Size	0.01	0.02	0.03
	(0.02)	(0.02)	(0.02)
Time_2008	0.01	0.01	0.02**
	(0.01)	(0.01)	(0.010)
Time_2009	-0.00	0.02**	0.02*
	(0.01)	(0.01)	(0.01)
Time_2010	-0.01	0.00	-0.00
	(0.01)	(0.01)	(0.01)
Time_2011	-0.01*	-0.00	-0.01*
	(0.01)	(0.01)	(0.01)
Time_2012	-0.02***	0.01	-0.02**
	(0.01)	(0.01)	(0.01)
Time_2013	-0.03***	0.01	-0.02***
	(0.01)	(0.01)	(0.01)
Constant	0.11***	0.07*	0.18***
	(0.03)	(0.04)	(0.04)
Observations	1,986	1,986	1,986
R-squared	0.036	0.072	0.113

Standard errors in parentheses

*** p < 0.01, ** p < 0.05, * p < 0.1

According to the conducted Hausman's test, (Prob > χ^2 = 0.0287 for the short term leverage model; Prob > χ^2 = 0.0000 for the long term model; Prob >χ^2 = 0.0000 for the total leverage model) used to choose among the fixed or random effects model, the null hypothesis is that the unobserved effect is not correlated with the explanatory variable. The statistically significant difference is interpreted as evidence against the random effects model. Therefore, the analyzed model is the fixed effects model.

According to the obtained results, we can conclude that ROA and the time dummy variables impact the short term leverage ratio. The relation between the cash flow ratio and the short term leverage is not statistically significant. Profitability expressed only with ROA is negatively related to the short term leverage, which is consistent with our hypothesis. The relations between the short term leverage ratio and the remaining ratios, i.e. variables are not statistically significant. The variables used to control for the effect of different time periods are negatively related to short term leverage for the years 2011, 2012, and 2013. The time dummy variable for the year 2007 has been omitted due to perfect collinearity.

However, the explanatory power of the presented models is weak, as R^2 in the case of short term leverage equals 0.036, implying that 3.6% of the variance in the short term leverage ratios is explained by the variability in the independent variables.

According to the obtained results, we can conclude that the cash flow ratio and the TA ratio impact the long term leverage ratio. The main variable of interest, the cash flow ratio is negatively related to the long term leverage, as hypothesized. The ratio of tangible to total assets is positively related to the long term leverage, as expected. The relations between the long term leverage ratio and the remaining ratios, i.e. variables are not statistically significant. The variables used to control for the effect of different time periods are positively related to the long term leverage ratio only for the year 2009. The time dummy variable for the year 2007 has been omitted due to perfect collinearity.

The explanatory power of the presented models is weak, as R^2 in the case of long term leverage equals 0.072, implying that 7.2% of the variance in the long term leverage can be explained by the variability in the independent variables.

According to the obtained results, we can conclude that the cash flow ratio, profitability expressed with ROA and the ratio of tangible to total assets impact the total leverage in SMEs. The cash flow ratio and ROA are negatively related to the total leverage ratio, which is in accordance with our hypotheses. The ratio of tangible to total assets is positively related to the total leverage ratio. The relations between the total leverage ratio and the remaining ratios, i.e. variables are not statistically significant. The variables used to control for the effect of different time periods are positively related for to the total leverage for the years 2008 and 2009, while negatively related for the years

2011, 2012, and 2013. The time dummy variable for the year 2007 has been omitted due to perfect collinearity.

The explanatory power of the presented models is weak, as R^2 in the case of total leverage equals 0.113, implying that 11.3% of the variance in the total leverage can be explained by the variability in the independent variables

8 DISCUSSION AND CONCLUSIONS

8.1 Discussion

The conducted tests were used to assess the determinants of the capital structure in the Slovenian SMEs and the validity of the pecking order theory. We used three types of leverage, i.e. short term, long term, and total leverage in order to test the theory, and the lack of equity capital generation during the crisis period in Slovenia.

The pecking order theory was tested with numerous ratios, namely the cash flow ratio, profit margin, return on assets, the ratio of tangible to total assets, and growth in revenues. We used numerous ratios in order to obtain more detailed inferences regarding the capital structure of the companies. We also included two variables, used as controls for firms' size and time period.

We expected to observe a negative relation between the cash flow ratio and all three types of firm leverage, which would confirm the assumption that the smaller generation of adequate internal funds, the larger the reliance on debt financing, thereby confirming the presence of the pecking order theory. In the case of the Slovenian SMEs, we observed a statistically significant negative relation between the cash flow ratio and the long term and total leverage ratios.

The profit margin was used as a proxy for the cost structure and as an indicator of how much revenue is actually kept as income. Higher profit margins indicate greater ability to generate internal funds. Our hypothesis during the observed crisis period included lower profit margins, which should be negatively related to leverage. This would prove the existence of the pecking order theory and simultaneously explain the greater indebtedness of firms during the observed period. However, according to the presented results, we did not observe statistically significant relations between the profit margin and the leverage ratios.

The return on assets was used to examine whether the invested capital generates any additional earnings and whether the firms are effectively utilizing their available funds, i.e. whether they are investing properly. A high ROA should be accompanied by low levels of debt. As regards the

Slovenian SMEs, we were expecting low ROA values and higher leverage ratios, i.e. a negative relation. However, our results confirmed the hypothesis that ROA is negatively related with the short term and total leverage ratios.

The ratio of tangible to total assets was used as a proxy for the asset structure of a company and the availability of collateral. In terms of the pecking order theory and the Slovenian SMEs, we were expecting to observe that higher values of the ratio should have a positive impact on leverage, implying that firms with more tangible assets should exhibit higher leverage. According to the presented results, we observed a statistically significant relation between the tangible to total assets ratio and long term and total leverage ratios.

Growth in revenues was used as a variable for testing the impact of firms' growth, which signalizes greater debt capacity and should therefore be positively related to leverage. According to the presented results, we did not observe a statistically significant relation between revenue growth and the leverage ratios.

The results obtained from the panel data regression model confirmed the impact of cash flows, profitability (ROA) and assets structure on leverage. Our results varied depending on the different types of leverage. We found that ROA and the time dummy variables explained short term leverage; the cash flow ratio, assets structure, and a time dummy variable explained long term leverage; the cash flow ratio, profitability (ROA), assets structure, and the time dummy variables explained total leverage.

Table 8. Summary results

Variable	**Expected sign**	**Observed sign**		
		STL	**LTL**	**TL**
CF	-		-	-
PM	-			
ROA	-	-		-
TA	+		+	+
REg	+			

CONCLUSION

The analysis described in the previous three chapters was used to assess the determinants of the capital structure in SMEs during a predetermined period extending from 2006 to 2013. The SMEs sector was chosen due to its importance for economic growth and development, as these companies are major contributors to employment, innovation, competition, efficiency, and aggregate productivity growth.

The SMEs sector is very important for the EU, as it represents 99.8% of all companies. In 2014, there were 21.5 million SMEs estimated, 92% of which were micro enterprises. This market segment employs 89 million out of the 134 million employed people, or 66.6% of the total, full time employment in the business economy, the remainder being employment in large companies. This sector also contributes significantly to the wealth of the European Union.

The European and Slovenian SMEs have been negatively affected by the recent crisis, which has exposed weaknesses in different sectors of the economy. Some sectors, such as manufacturing, have recovered faster, in comparison to other sectors, such as construction. The crisis in the SMEs sector has also emphasized the problems with SMEs financing, as many companies were experiencing difficulties and financial constraints during this period. One notable difficulty with SMEs financing has been the lack of internally generated funds, which has led many companies to alternative financing sources, such as debt instruments.

Assuming that companies adhere to a specific capital structure for financing decision making purposes and including the notion of imperfect capital markets, the theoretical model that could best explain SMEs financing behavior during the crisis is the pecking order theory. The pecking order describes a setting in which firms prefer internal to external financing, and debt to equity issuance. If internally generated funds are less than required, firms first refer to the cash balance or marketable securities portfolio. When a need for external financing arises, firms first issue debt, followed by hybrid securities, such as convertible bonds, eventually issuing equity.

In order to assess whether the pecking order theory explains SMEs' financing patterns and capital structure, we conducted a panel data regression model in the statistical software Stata, on a random sample of the 287 Slovenian SMEs. The model was developed on the basis of previous studies of the pecking order theory. The research method used for analyzing the determinants of capital structure was the most appropriate for tackling longitudinal data observed over time and for the same cross section.

We chose several financial ratios in order to make inferences regarding the determinants of capital structure. Companies' leverage was tested with three dependent variables, namely short-term, long-

term, and total leverage ratios. The other ratios used as explanatory variables consisted of the cash flow ratio, profit margin, return on assets, tangible to total assets and revenue growth.

We found evidence that the cash flow ratio, profitability, and assets structure explained leverage. The main explanatory variable used as a proxy for internally generated funds, i.e. the cash flow variable was negatively related with the long term and total leverage ratios. Profitability represented by the ROA ratio had a significant impact on the short term and total leverage ratio. Assets structure explained the availability of collateral and consequently difficulties in obtaining external financing, as we observed a positive relationship in the cases of long term and total leverage.

However, the explanatory power of the pecking order theory was very low due to the very low R^2 values, which implies that even after proving that some of the chosen ratios explained leverage in Slovenian SMEs during the period from 2006 to 2013, we could not accept the pecking order theory as the proper theoretical model explaining capital structure. Nevertheless, our model could be improved by testing the impact of additional variables on leverage.

The return on equity could be used as an additional variable for testing the impact of profitability. The variable could be used as another profitability indicator, which represents returns on investment, the possibility to retain earnings, i.e. contribute to the internal funds to be first used for growth opportunities, in accordance with the pecking order theory.

Another variable that could be used to assess the validity of the pecking order theory is the ratio of intangible to total assets. The ratio of intangible to total assets, whereby intangible assets consist of research and development, patents, licenses, and copyrights, is used as a proxy for future growth opportunities. The ratio has been used in previous studies of the pecking order theory as a control variable for firms' specific characteristics. The variable could be used to assess the asset structure of companies, i.e. to tackle the collateral availability. Companies with a higher ratio of intangible to total assets might experience difficulties in obtaining bank credits, which might decrease their leverage, implying a negative relationship with leverage.

The pecking order theory could be additionally tested with the variable growth in total assets. The variable can be used to examine the presence of agency costs, which occur as a consequence of the conflict between bondholders and shareholders, since shareholders tend to invest in projects that benefit themselves, at the expense of higher risk borne by bondholders. Hence, they do not necessarily maximize firms' value. This is especially true for the firms which possess more assets that allow for future growth opportunities. The more such assets a firm has, the lower its debt capacity. However, agency costs can be avoided, if short term debt is used to finance the assets,

implying that short term debt should be positively related to the assets growth, given that growing firms swap short term financing for long term borrowing.

In the case of SMEs, the owners, i.e. shareholders will be less incentivized to endanger their already fragile financial situation, due to the difficulties obtaining external financing, unlike in large companies, where the separation between ownership and managers is stronger, and the risk of losing one's complete wealth is lower. In addition and in line with the pecking order theory, in imperfect markets managers/owners are more equipped with the firms' specific information, allowing them to choose the type of securities they will issue. In such settings, the decision depends on the cost of capital, implying that debt might be preferred to equity.

The inclusion of more variables could provide additional insights regarding the determinants of capital structure which have not been assessed with the chosen ratios. In addition, it could also lead to a higher explanatory power of the model. Another improvement of the model could be inclusion of a control period, which could test the presence of the pecking order theory in a setting where firms have not been mired with debt due to the recession.

Despite the very low explanatory power of the presented model, the descriptive analysis of the constituent variables and the results helped us to examine the research question of insufficient equity capital and consequent indebtedness. We observed gradual increase in the leverage ratio, especially in the form of long-term leverage. The average value of the total leverage in our sample was declining during the observed period, due to the declining value of the short-term leverage. The movement in most of the other ratios was consistent with our hypothesis of insufficient internally generated funds and greater indebtedness.

We evidenced declining average values of the cash flow ratio, fluctuating and declining profitability ratios' average values, increasing average values of the ratio of tangible to total assets and decreasing average values of growth in revenues. The ratio analysis provided an overview of firms' operations that might have led to the lack of equity capital generation, whereas the test of the pecking order theory helped us assess the hierarchy of financing, enriching us with theoretically and empirically supported insights regarding the capital structure in the Slovenian SMEs.

The capital structure in SMEs is closely related to the financing patterns observed in those companies. SMEs' financing patterns, characterized by limited access to financial sources, represent growth impediments for numerous companies, as observed in the studies and surveys on the topics of their financial health as well as the presentation of the most recent developments in the field of innovative financing instruments.

Having discussed SMEs' importance for the broader economy, as drivers of innovation, competition, efficiency, employment, and aggregate productivity growth, we could conclude that policy makers, regulators, financial institutions, development funds, and investors should strive for the provision of growth enhancing conditions on one hand, and reduction of SMEs growth impediments, on the other.

Therefore, by tackling the identified challenges, proposing and implementing measures for promotion of small businesses, as well as enabling and improving access to either traditional or alternative financial sources, the aforementioned stakeholders in SMEs business environment could contribute significantly to the inception of new and development of existing companies, eventually leading to growth.

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APPENDICES

TABLE OF APPENDICES

LIST OF FIGURES

Appendix A: List of abbreviations

Table 1. List of abbreviations

Abbreviation	Meaning
CF	Cash flow ratio
COSME	Competitiveness of Small and Medium-sized Enterprises
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EIB Group	EIB Group (European Investment Bank and European Investment Fund)
EU	European Union
GDP	Gross domestic product
IBRD	International Bank for Reconstruction and Development
IPO	Initial Public Offering
LTL	Long term leverage ratio
OECD	Organization for Economic Co-operation and Development
PM	Profit margin
REg	Revenue growth
ROA	Return on assets
SAFE	Survey on the Access to Finance of Small and Medium-sized Enterprises
SBA	Small Business Act
SEF	Slovene Enterprise Fund
SME	Small and Medium enterprise
STL	Short term leverage ratio
TA	Tangible to total assets ratio
TL	Total leverage ratio
WB	The World Bank

Appendix B: SMEs in the EU and Slovenia

Figure 1. Distribution of enterprises by size and industry EU–28, 2014

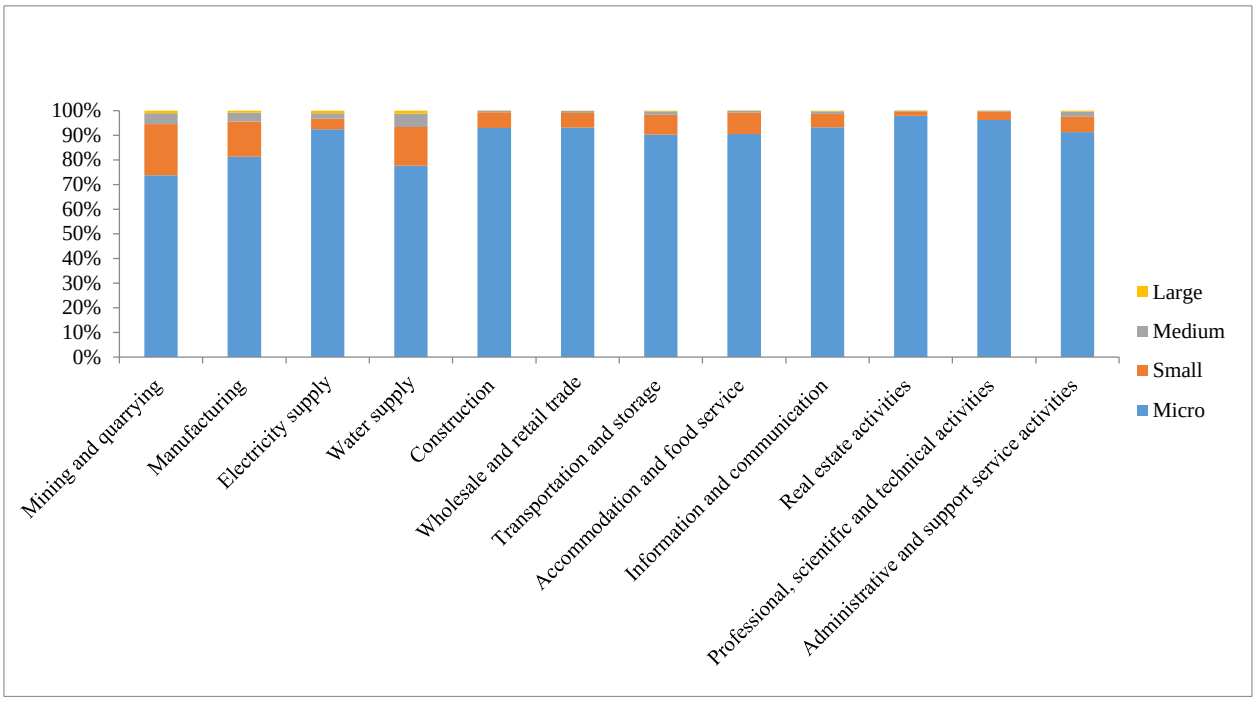

Figure 2. Share of total employment by size and industry EU–28, 2014

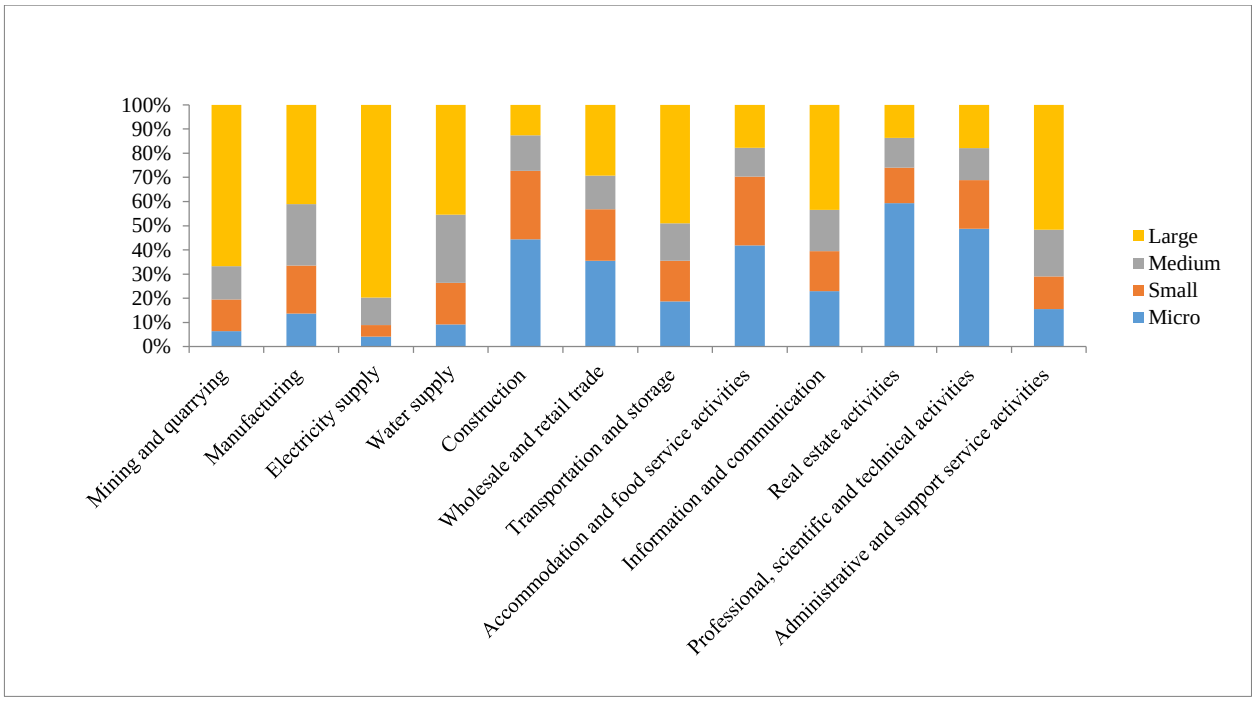

Figure 3. Number of employees in SMEs by size and industry EU−28, 2014

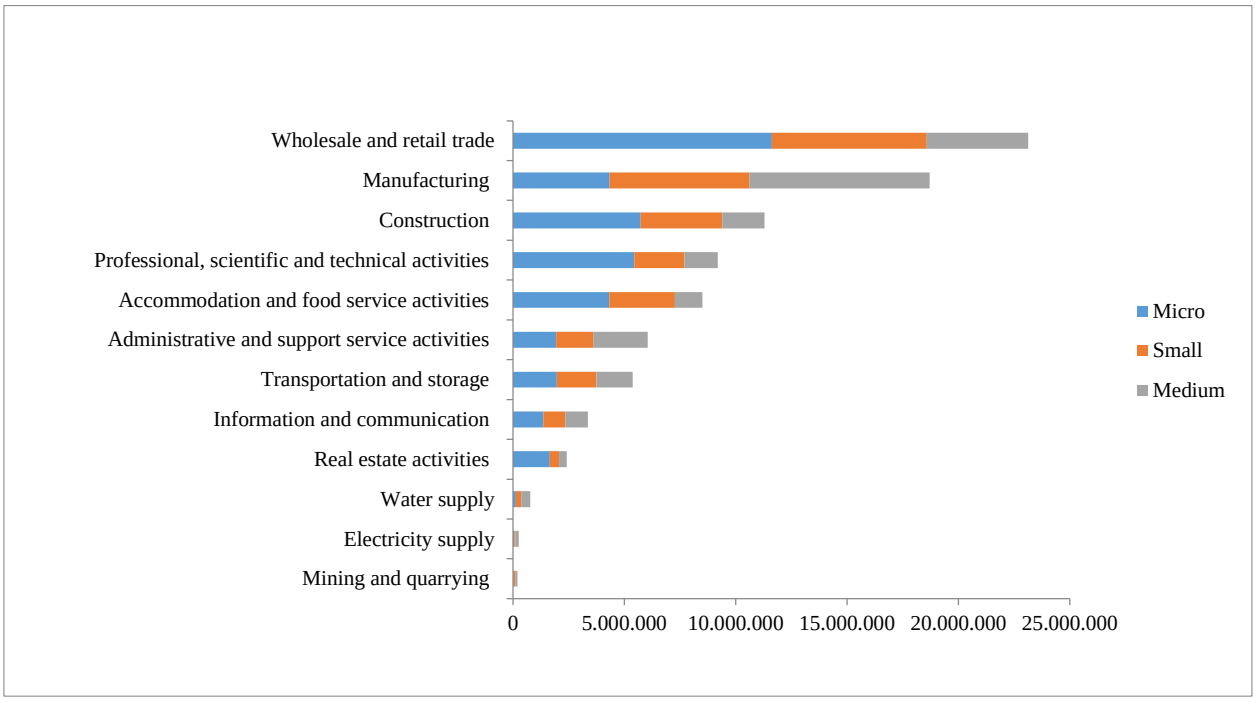

Figure 4. Distribution of enterprises by size and industry, Slovenia 2014

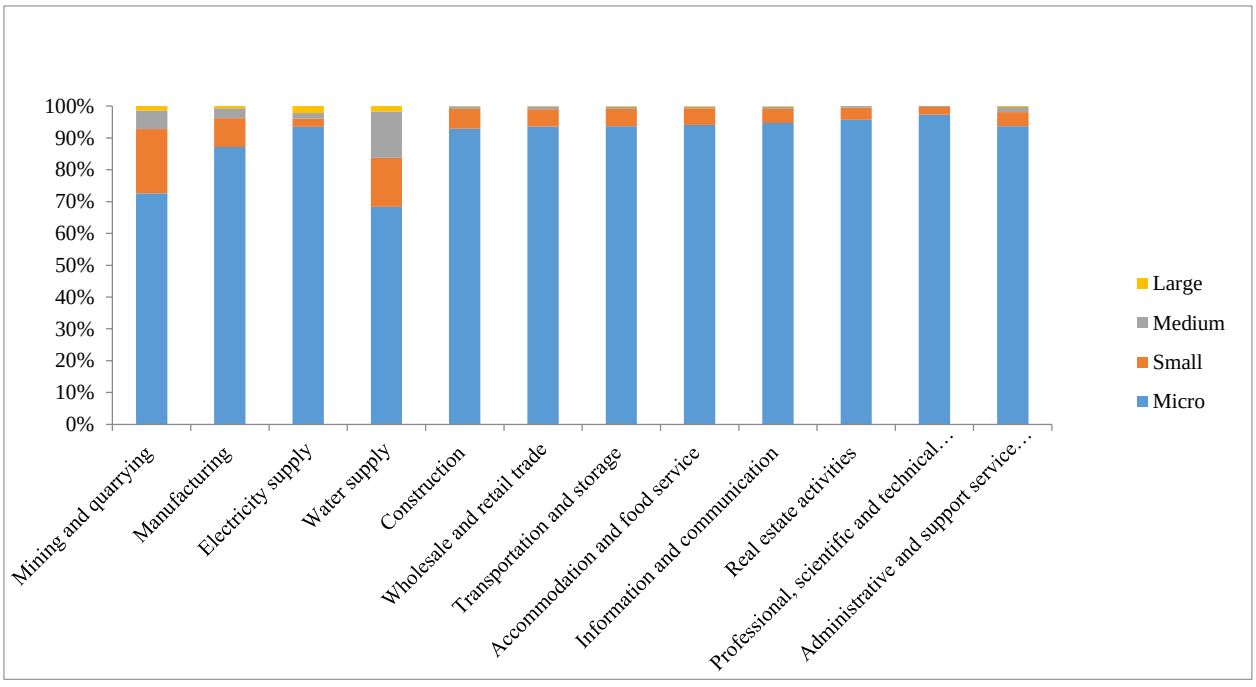

Figure 5. Share of total employment by size and industry, Slovenia 2014

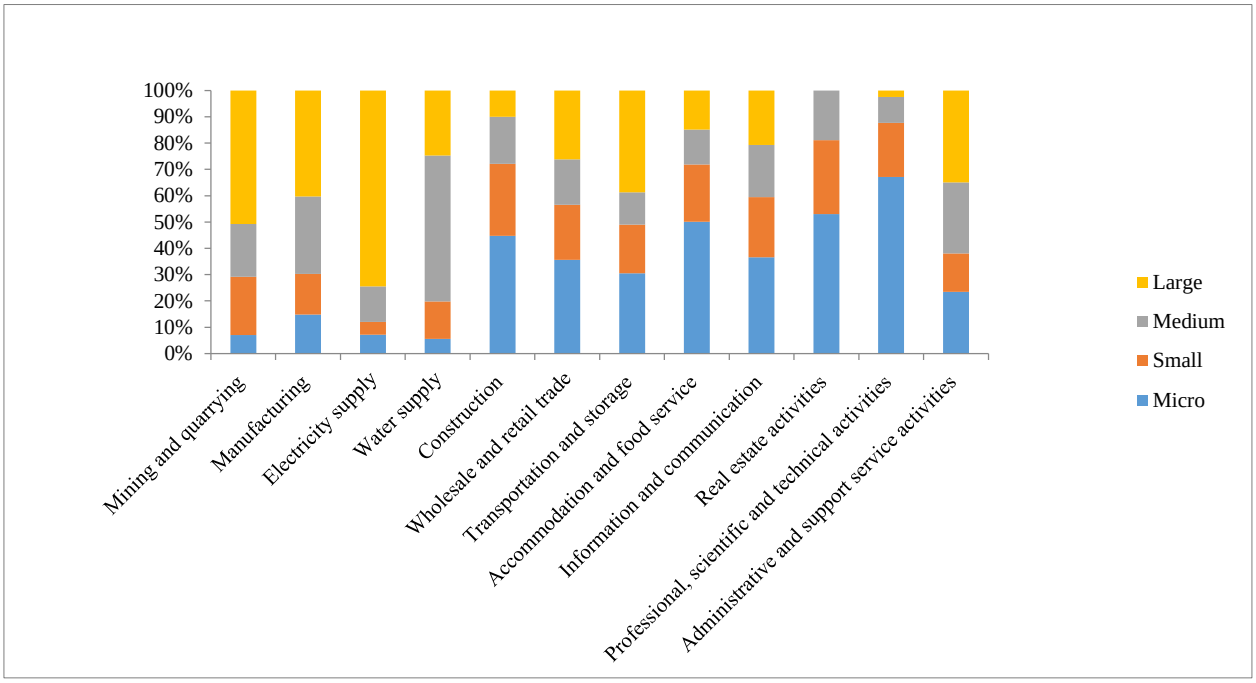

Figure 6. Number of employees in SMEs by size and industry, Slovenia 2014

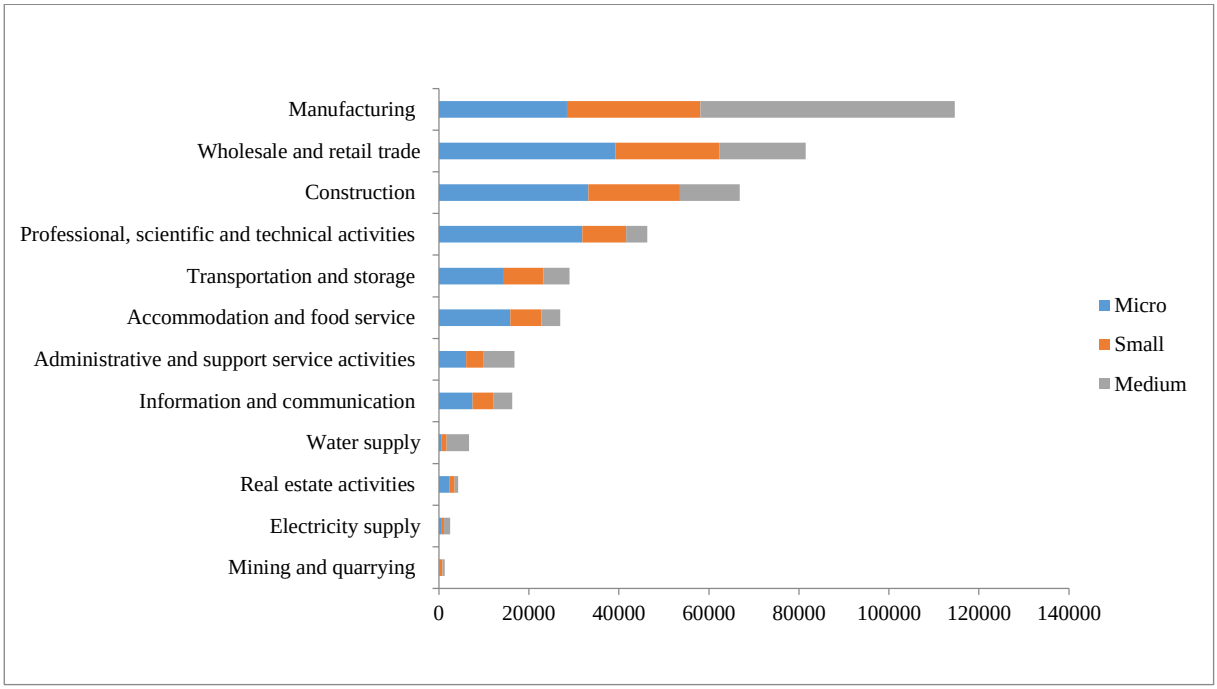

Figure 7. Number of companies by size, EU−28 (2008 = 100)

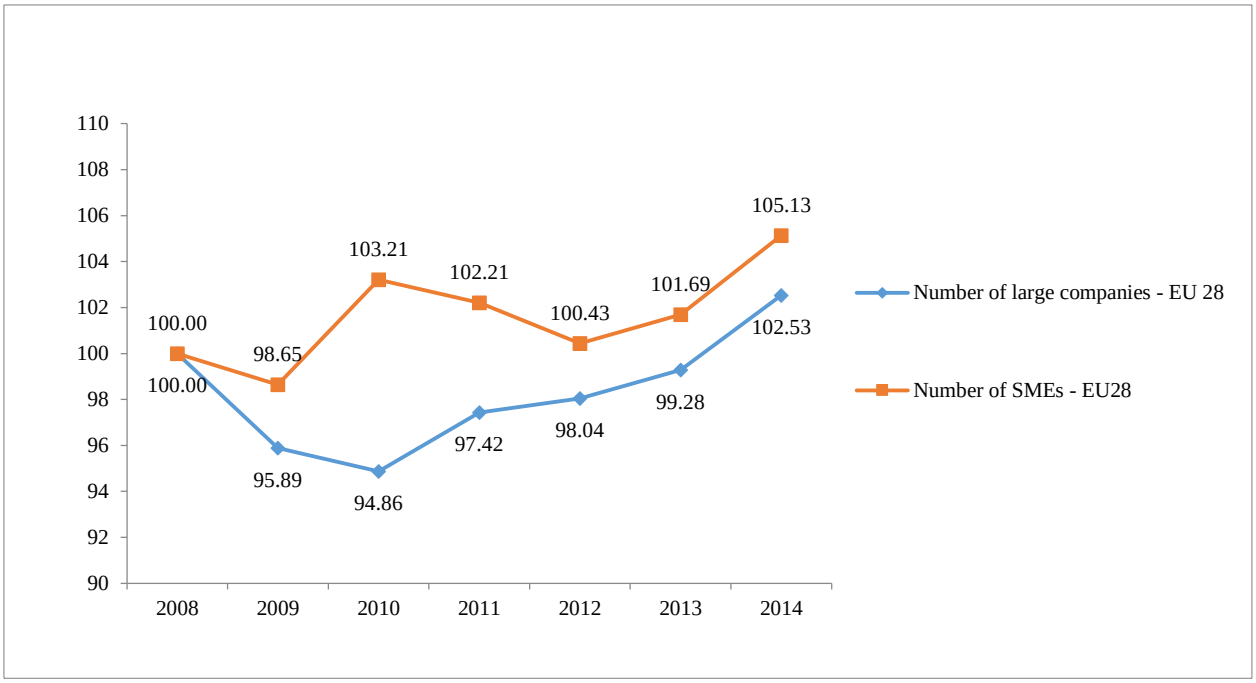

Figure 8. Number of employees by company's size, EU−28 (2008 = 100)

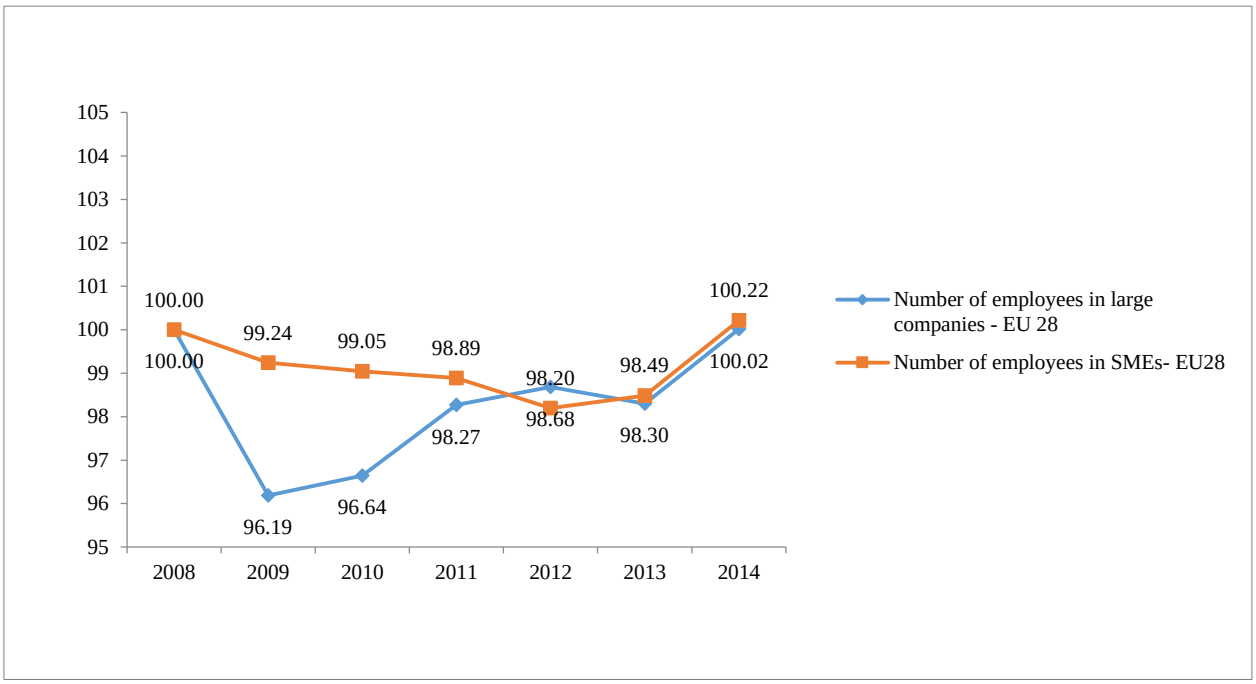

Figure 9. Number of companies by size, Slovenia (2008 = 100)

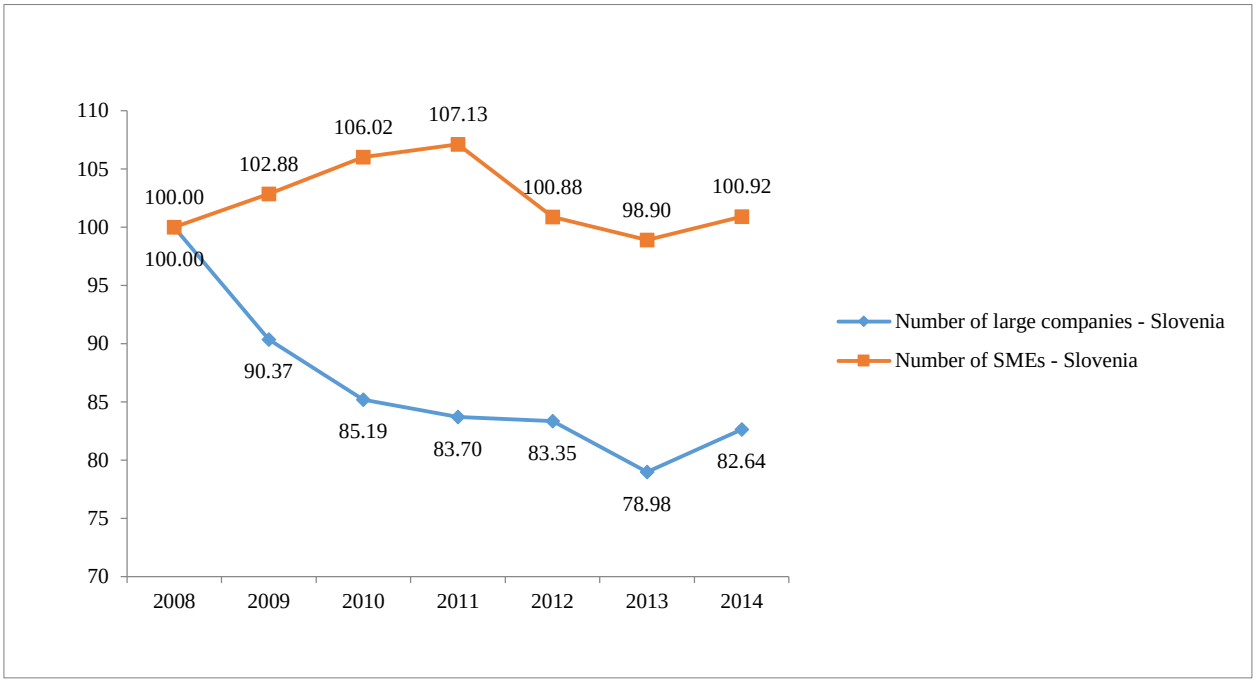

Figure 10. Number of employees by company's size, Slovenia (2008 = 100)