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A Survey of External and Internal Factors Influencing the Cost of Equity

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The cost of equity is an essential element of a business' financial decision-making process, which is influenced by a number of internal and external factors. This study intends to answer the question on how Czech CFOs perceive the impact of overall-economic and firm-specific factors on the cost of equity. The survey was carried out in 2015 and our sample covers 40 respondents. The findings show that there is a gap between the theory and practice and that the country's specifics, in particular the low level of the financial market development, play a significant role in the perception of cost of equity capital determinants. First, the most commonly used cost of equity estimation approach is based on average historical returns. A considerably large number of the CFOs think that the ownership structure, dividend policy, ability to forecast financial results, stability of company´s earnings and flexibility in capital raising are the internal factors with the most significant impact on the cost of equity. Otherwise, a rather low number of respondents consider the information asymmetry, corporate governance and financial performance as having a strong influence on the cost of equity. In regard to the external factors, a substantial majority of the respondents acknowledges that the long- and short-term interest rates as well as inflation, sovereign debt and risks linked to the banking system and financial market strongly affect the cost of equity.

Keywords: *Cost of Equity; Capital, External Factors; Internal Factors, Economic Policy; Financial Stability; Disclosure; Corporate Governance; Social Factors; Survey; Czech Republic.*

Introduction

The cost of equity capital (hereinafter only as the "CEC") is an essential part of business decision-making process. The factors influencing the CEC are divided into two main groups: internal and external. The first group represents the internal environment of a company, while external factors serve as external environment of a company or macroeconomic conditions. On the one hand, a company can manage internal factors represented by factors such as financial disclosure, depth of corporate governance, and social responsibility. On the other hand, enterprises cannot take influence on external factors in the form of interest and tax rates, inflation, or stability of the national and global financial systems in order to modify them to the company's needs (Mokhova, 2016).

There are many academic theories on the CEC focusing on different approaches to its measurement, adjustment, and management. These theories have been predominantly developed in the conditions of well-developed economies of Western Europe and the USA since the 1950s. However, there are just a few surveys on the topic enabling to identify factors that may have significant impact on the financial decision making in the Central and Eastern European (CEE) countries, which are assumed to differ from well-developed EU´s markets in terms of their riskiness and return characteristics (Lizińska & Czapiewski, 2016), and which are characterized even twenty years in post-transformation period by underdeveloped national capital markets (Berk & Peterle, 2016; Lyócsa 2014). Although the financial theory assumes that raising capital via initial public offerings is the most efficient manner because of removing information failure (see e. g. La Porta *et al.*, 1997), there are many empirical studies delivering evidence that the Czech banking system plays a leading role in financing enterprises while the share of investment covered by private and public equity remains low (Meluzin *et al.*, 2018a, b, c). Meluzin *et al.* (2018c) and Roženský (2008) conclude that companies do not see the capital market as a source of financing because there might be cheaper and more flexible alternatives. An important role is also played by the ownership structure of companies operating in the Czech Republic: Foreign parent companies represent a massive influx of capital and decisions on capital structure are made at headquarters level abroad.

The purpose of this study is to survey a sample of chief financial officers (CFOs) covering large and non-financial common stock companies operating in the Czech Republic to answer the question on how they perceive influence of external and internal factors described in previous academic literature on the CEC. The economic theory suggests that the macroeconomic situation and in-house (internal) determinants indicate the positive or negative attitudes towards a specific financing strategy within a company (Meluzin *et al.*, 2016). Therefore, we aim to assess the level of compliance between theoretical approaches and corporate experience in regard to decision making on financial strategies by interviewing a sample of COFs operating in Czech enterprises. The main goal of this research is derived from the insufficient knowledge about cost of capital management in Czech enterprises compared to what we know about established U.S and Western European companies. By increasing the quantity and quality of knowledge about cost of capital management, we can

intensify the level of adapting the academic theory and empirical evidence for developing a successful corporate practice.

The novelty of research results presented in this study is defined in terms of the research approach which is survey-based. To our knowledge primary data on the topic is currently not available and prior academic studies have not documented overall-economic and firm-specific factors having impact on the cost of equity capital expressed by CFOs operating in Czech companies. Because of insufficient empirical results we also believe that a next contribution is addressing the issue whether the recent academic theories on the CEC can be used in the economic environment of one of the CEE markets.

Each theory is based on assumptions that might not always be in accordance with the real economy. Moreover, the CFOs might not pay attention to up-to-now research results in terms of managing the cost of capital (Mokhova, 2016). Therefore, our original survey findings are an essential contribution to understand the decision making process on equity in large and non-financial common stock companies operating in the Czech Republic. Revealing a lack of knowledge what factors take influence on decision making on the CEC management in the real world is a starting-point while formulating new managerial strategies. We assume that our results are contributing not only for the corporate managers, but also for capital providers such as banks and stock exchanges and furthermore for macroeconomic policy makers while considering tools how to improve education and best practices applied by Czech CFOs in regard to a more skilled CEC management. We also believe that the findings of this study might have implications for designing incentives how to increase the efficiency of the local public and private equity market.

The methods applied in this paper include systematic and logical analysis of previous studies, data collection through structured interviews and questionnaires, statistical data processing, comparison, and expert interpretations.

The rest of this paper is structured as follows. First we analyse and interpret the previous piece of research on external and internal factors influencing the CEC. Section 3 deals with methodological aspects including the data gathering and their processing. Section 4 interprets research findings which are then discussed and summarised in the concluding part.

Theoretical Framework

In economics, capital can be viewed from different angles (in terms of balance sheet, in terms of time response, etc.). The equity capital refers to liability side of balance sheet (passive) and long-term capital. At the same time, equity capital can be divided into shareholder's equity, retained earnings and reserves. However, for the purpose of this research, the cost of equity capital is defined as a general category without further specifications. Thus the cost of equity capital is expressed as an expected rate of return by investors.

The most well-known techniques how to estimate the CEC are Capital Asset Pricing Model (CAPM), Arbitrage Pricing Theory (APT), Dividend discount model, and the three factors Fama-French model. Moore & Reichert (1983) examined a sample of 74 enterprises from different industries and based on results of financial analysis conclude that more than 80 % of them applied time-adjusted capital budgeting methods. They, however, point out that, compared to previous surveys, a high level of agreement between financial analytical methods applied by managers and theoretical approaches proposed by researchers exists (Mokhova, 2016). Bruner *et al.* (1998) conducted a survey on cost of capital in a sample of highly regarded corporations and leading financial advisor offices in order to investigate the gap between the corporate practice and theoretical approaches. The authors have shown that discounted cash flow (DCF) belongs to the most common investment evaluation method, the weighted average cost of capital (WACC) is the preferred discount rate and the CAPM is the prevailing approach how to calculate the cost of equity. Bruner *et al.* (1998) argue that practitioners and academics differ in the way how essential elements of the cost of equity are estimated: free-risk rate, stock's equity beta and market premium rate. The general opinion of corporate managers is that betas are taken from public sources while such betas are preferred that are related to a long interval of equity. Risk free rates should take into account the importance of the cash flows and a market-risk premium of 6% or lower is used by enterprises, while financial literature and advisors prefer using higher rates (Bruner *et al.*, 1998).

Several surveys concerning the CEC have been conducted recently as the cost of capital plays an essential role in practice (Tomczak, 2017). The Morningstar cost of capital survey was focused on the industry risk adjustment within models dealing with the cost-of-equity (Barad, 2011). The most common estimation methods to assess the cost of equity are the Build-Up Model and Capital Asset Pricing Model (74.9 % and 62 % respectively). A one-step DCF method is used by nearly 17% of surveyed firms and almost 19 % apply a multi-stage DCF method. The role of the Fama-French Model is negligible (5.7 %). The most remarkable finding is that 43.7 % of surveyed companies use betas from publicly accessible sources and only 15.6% calculate their own coefficients. Another research was conducted by the Association of Financial Professionals (Barad, 2011) and according to their results firms use the DCF method to estimate the CEC in order to choose among competing long-term investment projects. The perpetuity growth model supports managers while calculating the terminal value of multiple cash flow scenarios. The CEC is measured by CAPM; the risk free rates are based on yields of 10-year Treasuries and beta coefficients are derived from Bloomberg reports using the monthly returns over 5 years period. It is generally accepted that the risk-free rate expressed as the Treasury bill rate is an essential component of the CEC that is also taken into consideration on capital structure (Modigliani & Miller, 1958).

The detailed academic research on cost of equity drivers on firm-level suggests that the overall macroeconomic conditions and in-house (internal) factors are powerful to explain the positive or negative views of corporate managers towards a specific financing strategy (Meluzin *et al.*, 2018; Kljucnikov & Belas, 2016; Ng & Rezaee, 2015; Tran, 2014; Apergis *et al.*, 2012; Daske *et al.*, 2008; Easely & O'Hara, 2004; Geitzmann & Trombetta, 2003).

The literature highlights a wide range of firm-specific factors taking influence on the cost of equity capital (Michalak, 2016; Ng & Rezaee, 2015; Mazzotta & Veltri, 2014; Barth *et al.*, 2013; Baginski & Rakow, 2012; Chen *et al.*, 2011; Artiach & Clarkson, 2010; Shah & Butt, 2009; Chan *et al.*, 2009; Daske *et al.*, 2008; Gomes *et al.*, 2007; Geitzmann & Trombetta, 2003).

The internal factors comprise all factors within the company which can be controlled by managers. Mokhova (2016) suggests that these factors can be divided into several categories including e.g. corporate governance, dividend policy, or financial performance. However, there is one only determinant that can be interpreted as a direct linkage between the CEC and internal factors: the information asymmetry. Barron *et al.* (2012) and Armstrong *et al.* (2011) assume that a lower information asymmetry has a positive impact on the cost of equity capital. The information asymmetry is in turn closely linked to the corporate disclosure that might have a significant impact on reducing the cost of equity capital. Therefore, the corporate disclosure policy should contribute to increase the transparency and lower information asymmetry that is finally reflected in company's performance. The disclosure can be considered as a separate determinant. However, it can also consist of several individual internal factors affecting the cost of equity capital that can be influenced by corporate managers (Hail, 2002). Researchers very often suggest using accumulative corporate disclosure measurements that include factors such as accounting standards, quantity of information, information structure, type of disclosure, accounting and financing conservatism, reporting system, audit quality, etc. (Mokhova, 2016; Bistrova *et al.*, 2011; Lopes & Alencar, 2010; Meluzin, 2008; Espinosa & Trombetta, 2007).

Another category of internal factors is corporate governance. Similarly, the corporate governance involves various independent variables such as ownership structure, dividend policy, shareholder rights, investors' protection, board characteristics, etc. (Mokhova, 2016; Tran, 2014; Ramly, 2012). The prior research suggests a significant relationship between corporate governance and the CEC, specifically it is assumed that corporate governance is a strong factor contributing to lower cost of equity (Mazzotta & Veltri, 2014; Tran, 2014; Shah & Butt, 2009). An interconnection between the CEC on one side and social responsibility, corporate ethics and environmental performance on the other side could be indicated in previous studies as well (Mokhova, 2016; Ng & Rezaee, 2015; Choi, 2012; Ghoul *et al.*, 2011; Sharfman & Fernando, 2008).

There might be a number of factors influencing the cost of equity at the overall economic level including the economic growth, level of interest rates, sentiment of investors and regulatory issues (Pietrzak *et al.*, 2017). The macroeconomic factors are focused on investigation of variables that assess the financial stability of the system, where enterprises operate (see e. g. Houben *et al.*, 2004; Shinasi, 2004). Financial stability is believed to be one of the most important elements affecting how successful companies in doing their business in a country are; in spite of this there is yet no agreement on how financial stability should be defined. Mishkin (1990) suggest that financial stability should be defined through the opposite term to financial instability. For instance, an essential signal that the financial system becomes unstable is when external shocks interrupt the information flow which in turn causes disruption of the optimal allocation between savings and investment in economy. Another definition of financial instability is that a drop in prices of financial assets leads to a significant change of the economic performance (Crockett, 1997). Ferguson (2002) argues that financial instability is a situation, when the real economy is negatively influenced by a set of external factors. The author also adds that financial instability occurs, when prices of system-relevant financial assets have diverged significantly from their fundamental values; there is a market failure in providing credits, domestically and very often internationally. As a result, aggregate demand deviates significantly from the potential product of the country. Subsequently, Balakrishnan *et al.* (2009) deal with the issue how to capture the symptoms of a financial crisis and conclude that in such a situation the financial system gets under strain and fails completely in its intermediating role.

Based on their nature the external factors can be also classified in specific categories as suggested by e. g. Panizza *et al.* (2009). First of all, the macroeconomic policy consists of monetary and fiscal policy. The status quo of the economy can be assessed while combining the external determinants and the level of their development. An increasing number of financial academic studies deliver evidence the changes in the macroeconomic conditions and business cycle have a significant influence on firms´ financial performance and reflect also the cost of equity capital (Bhamara *et al.*, 2011; Ameer, 2012; Abaidoo & Kwenin, 2013).

If the financial instability is caused by the government the sovereign debt crisis is its manifestation. The sovereign debt crisis between 2007 and 2008 was a consequence of a crisis with roots in banking sector. When we deal with the causes, several factors should be mentioned: highly leveraged banks, financial system deregulation, growth of securitization, bankruptcy of investment banks as Bear Stearns and Lehman Brothers in the U.S. As a result, a massive increase of systematic risk led to global financial crisis and Great Recession. Governments responded by fiscal expansion and provided bailout packages to the banking industry in order to stabilize the financial system and investors´ confidence. These instruments raised public deficits in a dramatic way and consequently led to an increase of sovereign debt and sovereign default risk (Mokhova, 2016; Vukovic *et al*., Szymańska, 2018).

Several conventional and unconventional tools of monetary policy were applied by central bankers to support global economic recovery. The instruments were intended to take influence on interest rates and thus economic growth. The quantitative easing (QE) program, for instance, was implemented to reduce long-term yields of government bonds, which are essential in terms of pricing of private securities (Pažicky, 2018). The changes of interest rates might also have caused portfolio rebalancing effects because a drop in government bond yields supports demand for stocks and other securities.

It is a huge challenge for researchers to evaluate the real effects of monetary policy as there might be other factors on the macroeconomic level such as inflation or

GDP growth. There can be even circumstances in which a drop in interest rates does not represent a strong incentive for the real economic activity; e.g. credit restrictions blocking access to credits is such a barrier. The measures of OE remain ineffective if banks prefer to hold their reserves created by this unconventional tool of monetary policy and do not extend lending to enterprises. On the other hand, if banking industry starts to lend their holdings the money stock in the economy will grow and that in turn will accelerate the inflation. Additionally, QE leads to real exchange rate depreciation (Labonte, 2014).

Survey Design

This study is survey-based and employs financial economic theory to understand the issue on how Czech CFOs perceive the impact of overall-economic and firm-specific factors on the cost of equity. We analysed prior empirical studies (Brau & Fawcett, 2006; Bancel & Mittoo, 2009; Snieska *et al.*, 2016) and primary data for a sample of companies operating in the Czech Republic. Accordingly, the research approach consists of a comparative analysis of recent financial studies and reports, collecting primary data and their evaluation by statistical methods.

The primary data was collected by a survey of a target group of respondents. Our questionnaire consists of five main parts: (1) the cost of equity and their estimation techniques; (2) impact of external and internal factors on the cost of equity; (3) risks influencing cost of equity; (4) business cycles and cost of equity; and finally (5) enterprise's main characteristics. We chose the survey base approach because we could directly ask questions on areas we know little about due to a lack of data. One should keep in mind that surveys can measure only beliefs of respondents and not necessary the way how they act in the real world (Bancel & Mittoo, 2009).

The survey took place between June 2015 and December 2015. The sample consisted of large and very large and non-financial joint-stock companies operating in the Czech Republic. A database of 773 companies was compiled from the Amadeus by Bureau Van Dijk database. The Amadeus classifies companies as very large (large) based on one of the criteria as follows: (1) operating revenues are bigger than 100 million EUR (10 million EUR); (2) total assets exceed the value of 200 million EUR (20 million EUR); (3) number of employees is higher than 1000 (150); (4) listed at a stock exchange.

The target respondents are CFOs, who are viewed as experts in managing the cost of equity. The questionnaire was anonymous and a web-based survey solution was used while collecting the data (Survey Monkey). There are many reasons why this tool is recognized to be suitable while collecting primary data. We point out in its flexibility, convenience, simplicity and time and resources saving character (Mokhova, 2016). Because of a low response rate within the first stage the traditional postal services was employed to boost the volume of the data in the second round. The main reason why to use the postal services as a supportive tool to gather the data might be the conservatism of some CFOs who prefer face-to-face communication. Involving such a type of respondents into the sample provides us with the possibility of enlarging the variety of experts. The attitude how the managers communicate also reflects the decision-making process. Companies that broadly use e-mails, social networks, etc., are supposed to be more transparent and future-oriented which is in turn reflected in their decision-making process. Thus, using both traditional postal service and online-based communication solutions how to gather data allows us to capture different categories of respondents.

After complete filtering we sent 773 direct survey invitations. In sum, 53 firms had responded to the survey, which represents a response rate of 7 %. However, only 40 CFOs submitted usable answers, which represents 5 % response rate. The issues were highly sensitive; therefore, we consider 5 % response rate as a success in particular in the Czech business environment. The majority of our sample belongs to manufacturing industries (48 %) while the construction industry and electricity, gas, steam and air conditioning supply industries represent 12 % each. There are 59% of companies that are internationalized via regular export operations (Mokhova, 2016).

One of the key advantages of research based on primary data is its credibility. In other words, the quality of research is critical as its conclusions will have both the theoretical and practical implications. The credibility (reliability and validity) of the research can be assessed through several criteria (Mokhova, 2016). Firstly, the literature review of previous papers on the surveyed issues should represent a solid theoretical background and a tool how to extracts specific variables and define their measures. The prior survey-based studies on the topic were considered in order to formulate relevant research questions involved into the questionnaire. The internal consistency of the primary data set was done while applying the Cronbach's Alpha. As the Cronbach's Alpha coefficient value is equal to 0.808 the obtained data can be considered as reliable.

Research questions are crucial in any kind of research. Based on the theoretical background the following set of research questions was formulated:

- Our first main research area is oriented on the cost of equity estimation methods which are used in surveyed companies.
- Next, we investigate the perceptions of the CFOs to which extent the cost of equity is influenced by internal factors on one side and external factors on the other side.
- Thirdly, since the CEC has a strong link to risks we survey their perceived influence on the CEC.
- Fourth, we ask the respondents under which overall-economic conditions they experienced the lowest level of the CEC.

Substantial academic literature assumes that the listing of stocks directly influences the capital structure of a firm as well as other financial ratios and thus experience and perceptions of managers. Accordingly, we formulate the last research question as follows: What are the perceptions of overall-economic and firm-specific factors affecting the cost of equity among CFOs in listed and unlisted companies? Are there any significant disparities between these two subsamples?

The data that was collected from our sample of respondents was analysed by using tools of descriptive statistics. In order to answer the research questions,

univariate analyses on each survey issue was performed. Next, the data was evaluated by the Mann-Whitney U Test and Kolmogorov-Smirnov Test. Statistical data were processed at the significance levels of 5 and 1 %, respectively. Additionally, the Chi-Square Test and the one-sample Kolmogorov-Smirnov Test were conducted in order to assess whether the evaluation of external and internal determinants expressed by CFOs is equally distributed among the level of influence.

Survey Results

How Do the Enterprises Estimate Cost of Equity?

The first part of the questionnaire focuses on the estimation methods of the cost of equity. Moreover, we report essential descriptive statistics on the debt to equity ratio.

The respondents were asked to give evidence at the shares of equity, long-term debt and short-term debt in total capital. In this way, the financial structure of the overall sample could be identified. The average value of debt to equity within our sample is 1.74 and the standard deviation equals to 1.73 (for details see Table 1). The mean value of debt to equity capital is high values because of a very wide range of distribution as the 25th percentiles is 0.54 and 75th percentiles is 2.33 (Figure 1).

Furthermore, the interviewed managers were asked to indicate on a five-point scale with two anchors (never and always) "How often do you use the methods listed below to estimate the CEC?" The respondents were asked to choose from six methods: average historical returns, dividend discount model, CAPM, multi-beta CAPM model, arbitrage pricing theory, and finally three factors Fama-French model (Mokhova, 2016). The CFOs were also encouraged to indicate another non-mentioned method. Table 2 reports the survey results for the whole set of respondents expressed as an arithmetic mean ± standard deviation and followed by the median and minimum and maximum values. The most frequent method of the cost of equity estimation is the approach linked to average historical returns: half of the CFOs indicate that this method is applied always, often or very often. Historical returns are followed by the Dividend model that has been applied by 20% of the respondents. Furthermore, the evidence suggests that the Arbitrage model, the three factors Fama-French model and Multi-beta CAPM have never been used in the surveyed companies. The CAPM approach received a very weak support in the Czech Republic (only 5 % of CFOs state that they experienced this model) although a considerable attention is payed to this method in the academic theory.

Table 1

Debt-to-Equity Ratio

	Mean	Median	Min	Max	Std. Dev.
Debt-to-Equity Ratio	1.74	1.33	.00	9.00	1.73

Table 2

How do the Companies Estimate Cost of Equity?

	Mean	Median	Min	Max	Std. Dev.
CAPM	.45	.00	.00	5.00	1.38
Dividend model	.50	.00	.00	4.00	1.09
Average historical returns	1.95	2.00	.00	5.00	2.06

Note: Means are based on a five-point scale with two anchors - "never" and "always".

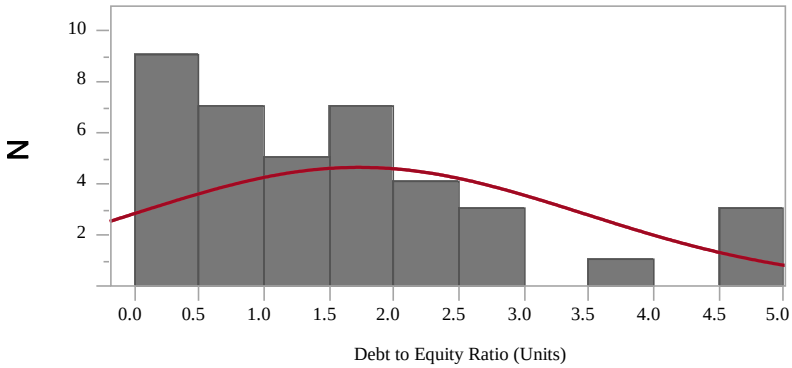

Figure 1. Distribution of Debt to Equity Ratio (trimmed by outliers)

Internal Factors Influencing Cost of Equity

The next question was focused on the firm-specific factors having impact on the cost of equity. The respondents were asked to indicate on a five-point scale ranging from 1 (low impact) to 5 (high impact): "Based on your experience, how significant is the influence of the following internal determinants on the cost of equity?" A list of 18 internal determinants has been compiled with an option to add another non-mentioned determinant. Table 3 shows the survey results of the descriptive data analysis, which are expressed as the relative frequency of answers 4 and 5 (agree) and 3 (neutral – indicates the lack of awareness on the investigated issue).

Most of the respondents agree that the ownership structure influences the CEC (mean = 4.20; agreeing 4 and 5 = 80 %). Furthermore, a vast majority of respondents believe that the dividend policy has also a strong impact on the CEC (agreeing 4 and 5 = 76 %), as well as the ability to forecast financial results (60 %), stability of company´s earnings (52 %), flexibility in raising external capital (52 %), stability of company's earnings (52 %) and capital structure (48 %). However, only 36 % of respondents share the opinion that a very good financial performance has a significant impact on the CEC reduction and almost 50 % of them perceive a rather neutral attitude in terms of the impact of factors such as the investors' protection, structure of the board of directors, board independence, audit quality, and corporate ethics. Thus, as a counter to the theory, the corporate governance and board characteristics are not considered to be important determinants in terms of CEC (only 44 % agree that stronger corporate governance might cut the cost of equity). The most surprising result is managers' perception of information asymmetry. According to our findings, only 40 % of the respondents strongly agree that lower information asymmetry between corporate managers and investors lowers the CEC. At the same time 32 % of respondents feel weakly the impact of this factor.

External Factors Influencing Cost of Equity

In order to evaluate the influence of external determinants on the CEC, the respondents were asked to lable on a seven-point scale with two anchors (-3 – decrease significantly and +3 – increase significantly while 0 means no impact): "Based on your experience, how significant is the impact of the following external determinants on the cost of equity?" Table 4 reports the relative frequency of respondents considering the listed external factors to have a significant influence on the CEC.

All surveyed CFOs share the opinion that a growth of long-term as well as short-term interest rates interest rates takes influence on the CEC and the inflation (100 % and 88 % of respondents respectively). More than three quarters of the CFOs think that factors such as the inflation, development on the financial market, sovereign and banking system default probability, credit rating of a country, GDP growth rates and the level of risk free rate strongly affect the CEC. Surprisingly, less than half of the corporate managers perceive the flow of foreign direct investments, trend in government spending and political stability as factors with a strong impact on the CEC. In addition, almost 70 % of interviewed managers consider sovereign debt to be insignificant from the CEC perspective. The unemployment rate is also viewed as a factor having a very low impact on the CEC.

Despite the fact that attitudes of CFOs in regard to perceived impact of external factors is logical and consistent, the direction of such an impact (whether a specific development of the determinant decreases or increases the CEC) varies. Table 4 shows additionally the links between the overall-economic determinants and the CEC and the level of agreement with indicated statements expressed by the managers, i.e. it shows how many managers (expressed as a percentage) share the opinion that a certain trend of a specific external factors will lower or accelerate the CEC. Obviously, 63 % of respondents assume that a risk free rate reduction will cause a drop in cost of equity as well as a flourishing financial market. At the same time, the long-term and short-term interest rate increase facilitate a growth of the cost of equity according to 87 % and 79 % of respondents respectively. Almost 70 % of respondents agree with the statement that a growth of sovereign default probability is likely to lead to a higher cost of equity. The findings concerning the GDP growth rates are surprising as 42 % of the respondents think that the GDP growth decreases the cost of equity capital and 33 % consider that the GDP growth increases the cost of equity capital. Such a result might indicate a possible lack of system relevant knowledge.

Table 3

Survey Results to the Question *"Based on Your Experience, How Significant the Impact of the Following Internal Determinants on the Cost of Equity"?*

Internal determinants	% 4-5	% 3	Mean	Median	Min	Max	Std. Dev.
Ownership structure	80	8	4.20	5.00	2.00	5.00	1.04
Dividend policy	76	12	3.88	4.00	1.00	5.00	1.17
Ability to forecast financial results	60	15	3.52	4.00	1.00	5.00	1.12
Stability of company's earnings	52	24	3.44	4.00	1.00	5.00	1.16
Flexibility in external financing	52	28	3.32	3.00	1.00	5.00	1.31
Capital structure (higher leverage means lower CEC)	48	24	3.40	3.00	1.00	5.00	1.22
High level of transparency (disclosure)	44	32	3.16	3.00	1.00	5.00	1.25
Strong corporate governance	44	32	3.12	3.00	1.00	5.00	1.20
High share of liquid assets	40	36	3.24	3.00	1.00	5.00	1.05
High level of investors' protection	40	40	3.40	3.00	1.00	5.00	1.26
Lower information asymmetry between managers and investors	40	32	3.08	3.00	1.00	5.00	1.21
Very good financial performance	36	16	2.84	3.00	1.00	5.00	1.40
Stronger shareholder rights	36	28	3.12	3.00	1.00	5.00	1.27
Size of the company	28	44	3.00	3.00	2,00	4,00	0.76
Board of directors structure	26	48	2.76	3.00	1.00	5.00	1.20
High level of board independence	21	57	2.76	3.00	1.00	5.00	1.16
High level of audit quality (quality of accounting information)	16	40	2.64	3.00	1.00	5.00	1.11
Corporate ethics	16	48	2.68	3.00	1.00	5.00	1.07

Note: Means are based on a five-point scale ranging from 1 (definitely disagree) to 5 (definitely agree).

Table 4

Survey Results to the Questions 1) *"Based on Your Experience, How Significant is the Impact of the Following External Determinants on the Cost of Equity"?* 2) *"What is the Direction of the Influence of the Listed Determinants"?*

External determinants	% 2-3	Mean	Median	Std. Dev.	Min	Max	Direction	Increase (%)	Direction	Decrease (%)
Long-term interest rate	100	1.37	2.00	1.35	-2.00	3.00	…growth	87	…growth	13
Short-term interest rate	88	1.43	2.00	1.19	-1.00	3.00	…growth	79	…growth	8
Inflation	87	1.23	2.00	1.33	-3.00	3.00	…growth	79	…growth	8
Financial market development	83	-0.60	-1.00	1.07	-2.00	2.00	…growth	21	…decrease	63
GDP	75	-0.33	0.00	1.67	-3.00	2.00	…growth	33	…growth	42
Sovereign default probability	75	1.17	1.50	1.66	-3.00	3.00	…growth	67	…growth	8
Sovereign rating	75	-0.73	-1.00	1.28	-3.00	2.00	…growth	17	…decrease	58
Risk free rate	75	-0.77	-1.00	1,22	-3.00	2.00	…decrease	13	…decrease	63
Probability of banking system default	71	1.40	2.00	1.28	-1.00	3.00	…growth	63	…growth	8
Raw materials inflation (oil)	67	0.70	1.00	1.26	-3.00	3.00	…growth	54	…growth	13
Exchange rate of domestic currency	67	-0.17	0.00	1,64	-3.00	3.00	…appreciation	38	…depreciation	0
Bank loans to non-financial private sector	63	-0.07	0.00	1.08	-2.00	3.00	…growth	29	…growth	33
Stock market volatility	63	0.27	0.00	1.68	-3.00	3.00	…growth	38	…growth	25
Corporate tax rate	58	0.50	0.00	1.36	-2.00	3.00	…growth	42	…growth	17
Banks capital adequacy	55	0.40	0.00	1.00	-1.00	2.00	…growth	42	…growth	13
Banking system liquidity	54	0.30	0.00	0.92	-1.00	2.00	…growth	33	…growth	21
Money supply	54	-0.03	0.00	1.00	-2.00	2.00	…growth	21	…growth	33
Corruption	54	1.10	1.00	0.99	0.00	3.00	…growth	54	…growth	0
Political stability	50	0.13	0.00	1.63	-2.00	3.00	…growth	25	…growth	25
Unemployment rate	37	-0.57	0.00	0.90	-3.00	1.00	…growth	4	…growth	33
Foreign direct investments	46	-0.43	0.00	1.36	-3.00	3.00	…growth	13	…growth	33
Government expenditures	46	-0.07	0.00	0.78	-1.00	2.00	…growth	25	…growth	21
Sovereign debt	33	0.30	0.00	0.84	-2.00	2.00	…growth	29	…growth	4

Note: Means are based on a seven-point scale ranging from -3 (decrease significantly) to +3 (increase significantly).

Risks Influencing Cost of Equity

The next survey question ("Based on your experience, which risks take influence on the CEC?") is focused on the assessing of internal and external risks a firm might have to deal with while managing the cost of equity capital. The interviewed managers were encouraged to indicate the level of importance on a five-point scale with to anchors (1 – no impact to 5 – the maximum impact). The risks are divided into two categories: systematic risks, i.e. the exogenous risks (inflation, interest rates, sovereign default, corruption, currency depreciation or appreciation, etc.) and endogenous risks, i.e. the company-linked risks (e.g. moral hazard, information asymmetry, liquidity, leadership, competition, counter party risk, etc.).

Table 5 shows survey results based on descriptive statistics. The individual risks are ranked from those with the biggest impact to those with the least impact.

The CFOs ranked the liquidity risk as that one with the highest importance in terms of the impact on CEC. Surprisingly, the interviewed CFOs pay little attention to the phenomena of moral hazard and corruption. As opposed to the theory, the Czech CFOs do not consider asymmetric distribution of information as one of the most significant risks. While comparing systemic and individual risks the systemic risk are perceived more critical than individual. We can conclude that respondents consider the changes in external environment to have greater impact than internal factors; however, the direct influence of individual external factors is unknown in most of the cases.

Table 5

Survey Results to the Question *"Based on Your Experience Indicate the Significance of the Following Risks Having Impact on the Cost of Equity."*

Risk category	Mean	Median	Min	Max	Std. Dev.
Liquidity risk	3.90	4.00	2.00	5.00	0.91
Systemic risk	3.85	4.00	2.00	5.00	1.09
Individual risk	3.75	3.50	2.00	5.00	0.97
Country party risk	3.70	4.00	1.00	5.00	1.08
Management risk	3.65	4.00	2.00	5.00	0.93
Interest rate risk	3.60	4.00	2.00	5.00	0.82
Competition risk	3.50	3.00	2.00	5.00	0.95
Sovereign default risk	3.45	3.00	1.00	5.00	1.28
Inflation risk	3.40	3.00	2.00	5.00	0.94
Currency risk	3.35	3.00	2.00	5.00	0.93
Information asymmetry	3.20	3.00	2.00	4.00	0.77
Corruption risk	2.90	3.00	1.00	5.00	1.12
Moral hazard	2.90	3.00	2.00	4.00	0.85

Note: Means are based on a five-point scale ranging from 1 (no impact) to 5 (maximum impact).

Business Cycles and the Cost of Equity

The last survey question is referred to the macroeconomic development: "Based on your experience, under which macroeconomic conditions a company might reach the lowest costs of equity capital?" There were five stages of the business cycle defined and the interviewed managers had to indicate on a five-grade scale with two

anchors (ranging from 1 – no impact to 5 – the maximum impact) their perspectives. To be more specific, the respondents were asked to indicate in what overall-economic conditions a company will reduce the cost of equity. The business cycle that from the theoretical perspective represents a combination of various external determinants and their certain degree were as follows: macroeconomic decline, stagnation, stability, macroeconomic boom, and "over heated" economy.

The survey results suggest that the interviewed managers do not have a clear vision under what macroeconomic conditions the cost of equity can be lowered. However, half of them expect that the costs of equity will reach its minimum values if the economy of the country is in recession. At the same time, more than 40 % of the CFOs do not believe that the CEC will drop within expansion stage of the business cycle. Additionally, almost 50 % of the respondents indicate that a stabilized economy will imply neutral effects in terms of the CEC. On the other hand, a stable macroeconomic situation has been perceived as a combination of external determinants decreasing the CEC and enables the CFOs to be more focused on managing firm-specific factors, which impact the cost of equity in a greater extent within this stage of the business cycle (Table 6).

Table 6

Survey Results to the Question *"Based on Your Experience Indicate Under which Overall-Economic Conditions the Costs of Equity Capital reach its Minimum Values?"*

State of economy	% 4-5	% 3	Mean	Median	Min	Max	Std. Dev.
Recession	50 %	11 %	3.22	3.50	1.00	5.00	1.26
Stagnation	39 %	39 %	3.11	3.00	1.00	5.00	1.08
Stability	32 %	48 %	3.11	3.00	1.00	5.00	1.02
Expansion	39 %	17 %	2.83	3.00	1.00	4.00	1.10
Over heated	28 %	28 %	2.67	3.00	1.00	5.00	1.37

Note: Means are based on a five-point scale ranging from 1 (no impact) to 5 (maximum impact).

Listed and Unlisted Companies and Perceived Impact of Exogenous and Firm-Specific Factors on the Cost of Equity

The listing on a stock exchange was indicated by 22 % of the respondents. We applied two nonparametric tests to find out if there are differences between listed and non-listed companies within our sample of companies. The Mann-Whitney U test and Kolmogorov-Smirnov test at the 5 % level were used to test statistically significant differences regarding the firm-specific and macroeconomic determinants and their impact on the cost of equity.

The only difference in terms of internal factors which proved to be statistically significant concerns the audit quality. Accordingly, the CFOs in companies which are listed perceive the audit quality to be a more important factor while reducing the CEC than the CFOs in non-listed companies. Moreover, the mean values indicate that listed and non-listed companies also differ in their perceptions of other factors (these differences are, however, not statistically significant). First of all, the managers in listed companies view the influence of information asymmetry and investors' protection to be more important than non-listed companies. Next, the CFOs in listed companies indicate that financial performance and flexibility in internal financing are rather unimportant while the CFOs operating in not public companies feel rather strongly about these factors. For details see Figure 2.

In regard to external factors three statistically significant differences between both subsamples were identified; specifically free risk rate, sovereign debt, and sovereign rating. While comparing the level of influence of external factors (see Figure 3) we assume that the companies listed in a stock exchange consider these external factors to have a greater impact on the CEC changes than non-listed companies. Concerning the state of financial stability the statistical tests indicate no statistically significant difference between public and private companies. The results of the tests for statistically significant differences are shown in Table 7.

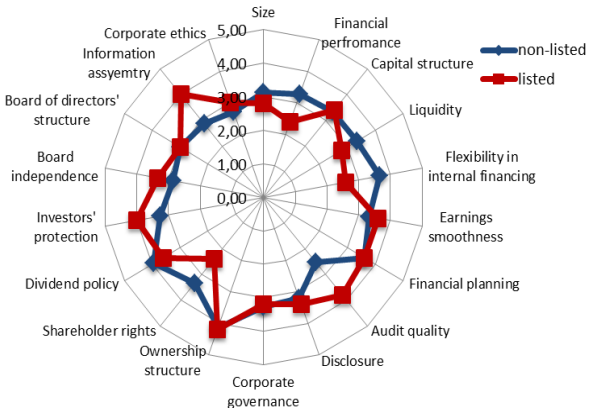

Figure 2. Impact of Firm-Specific Factors on the CEC in Public and Private Companies (mean values)

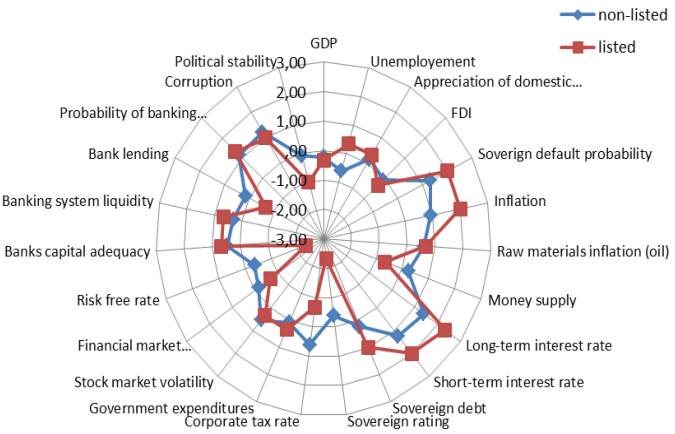

Figure 3. Impact of External Factors on the CEC in Public and Private Companies (mean values)

Table 7

Company Listing and its Impact on Perception of Selected External Factors

Company Listing	Descriptive statistics	External factors		
		Sovereign debt	Sovereign rating	Risk free rate
Total	Mean	.250	-.670	-.790
	Median	0.00	-1.00	-1.00
	Std. Dev.	.737	1.308	1.318
Yes	Mean	1.00*	-2.33*	-2.33*
	Median	1.00	-2.00	-2.00
	Std. Dev.	0.00	.577	.577
No	Mean	.140	-.430	-.570
	Median	0.00	-1.00	-1.00
	Std. Dev.	.727	1.207	1.248

Note: * indicates a statistically significant difference between subsamples (listed and non-listed) using the Mann-Whitney U test and Kolmogorov-Smirnov test at the 5 % level.

Is There a Gap in Knowledge?

The Chi-Square Test was applied in order to find out whether the assessment of external and internal determinants by respondents is equally distributed among the level of influence (for results see Table 8 and Table 9). In other words, we aim to find out whether the interviewed managers assess the degree of impact of each determinant equally, which might mean a lack of knowledge within our sample.

In regard to the firm-specific determinants the Chi-Squared test indicate that managers do not assess equally ownership structure, board independence, structure of the board of directors, system of financial planning, quality of audit, dividend policy, and corporate ethics. In other words, the CFOs are familiar with the impact of those determinants on the CEC. In contrast we interpret these results in the way that there is insufficient knowledge or experience among the CFOs concerning the impact of the rest of firm-specific determinants such as size, financial results, financial structure, liquidity, flexibility in terms of funding from internal sources, smoothness of cash flow, corporate governance, disclosure, investor protection, shareholder rights, and asymmetry of information.

The corporate managers seem to have just insufficient knowledge about the direction of impact of exogenous factors on the cost of equity. We found out that an equal spread among observations exists for determinants such as the growth rates of GDP, currency appreciations/ depreciations, probability of sovereign default, sovereign rating, inflation measuring raw material increase, short-term interest rate, risk free rate, capital adequacy in banking sector, its liquidity and probability of a default, and the level of corruption.

Additionally, the one-sample Kolmogorov-Smirnov test was conducted. The results indicate that only the capital structure is normally distributed with the mean of 3.4 and standard deviation of 1.22 (this means no effects on the cost of equity). Concerning the exogenous determinants, the statistics imply that determinants such as the gross domestic product growth and inflation of raw materials are normally distributed with the mean close to 0 indicating no influence on the cost of equity.

Discussion

Our survey results show a gap in knowledge and experience of Czech managers in regard to the cost of equity estimation methods and factors affecting their character. As previous studies provided results predominantly from the U.S. market, the UK, and well-developed Western-European countries (Barth *et al.*, 2013; Chen *et al.*, 2011; Chan *et al.*, 2009), our survey delivers the evidence from a Central and Eastern European country in the post-transformation period. Thus, we believe that our results represent a value-added for both the theory and corporate practice as such evidence is to our knowledge not available.

Table 8

Survey Results: Evaluation of Internal Factors by Experts and their Distribution among the Level of Influence

	Size	Financial Performance	Financial Structure	Liquidity	Flexibility in Raising External Capital	Earnings Smoothness	Financial Planning	Audit Quality	Disclosure
Chi-Square	1.280	1.200	4.000	8.000	5.200	5.200	14.800	9.600	4.500
df	2	4	4	4	4	4	4	4	4
Asymp. Sig.	.527	.878	.406	.092	.267	.267	.005	.048	0.422
	Corporate Governance	**Ownership Structure**	**Shareholder Rights**	**Dividend Policy**	**Investors´ Protection**	**Board Independence**	**Board of Directors´ Structure**	**Information Asymmetry**	**Corporate Ethics**
Chi-Square	8.800	11.960	3.600	14.800	9.200	19.600	14.400	4.400	3.800
df	4	3	4	4	4	4	4	4	4
Asymp. Sig.	.066	.008	.463	.005	.056	.001	.006	.355	.455

Note: Chi-Square Test was applied at the 5 % level.

Table 9

Survey Results: Evaluation of External Factors by Experts and their Distribution among the Level of Influence

	GDP	Unemployment Rate	Appreciation of Domestic Currency	Foreign Direct Investment	Sovereign Default Probability	Inflation	Raw Materials Inflation	Money Supply
Chi-Square	1.500	28.500	9.250	32.583	10.000	17.000	9.500	12.250
df	5	4	6	6	5	5	5	4
Asymp. Sig.	.913	.000	.160	.000	.075	.004	.091	.016
	Sovereign Debt	**Sovereign Rating**	**Long-Term Interest Rate**	**Short-Term Interest Rate**	**Corporate Tax Rate**	**Government Expenditures**	**Stock Market Volatility**	**Financial Market Development**
Chi-Square	25.000	8.500	11.417	5.583	14.500	12.667	15.667	13.917
df	3	5	4	4	5	3	6	4
Asymp. Sig.	.000	.131	.022	.233	.013	.005	.016	.008
	Risk Free Rate	**Bank Capital Adequacy**	**Banking System Liquidity**	**Bank Lending**	**Probability of Banking System Default**	**Corruption**	**Political Stability**	
Chi-Square	9.500	6.000	5.667	15.500	3.083	7.000	21.500	
df	5	3	3	5	4	3	5	
Asymp. Sig.	.091	.112	.129	.008	.544	.072	.001	

Note: Chi-Square Test was applied at the 5 % level.

Firstly, while estimating the cost of equity, a vast majority of the Czech managers has experienced only the historical returns approach. Other more advanced models established in the academic literature (e. g. Barad, 2011; Buner *et al.*, 1998; Moore & Reichert, 1983) received a very low support within our sample of respondents. This might be surprising as we surveyed large and very large companies that are supposed to be familiar with more advanced managerial techniques. We explain this finding by substantial different business conditions and sentiments on the local capital market, as the Czech Republic has not developed a sufficiently attractive investment environment and a strong investment culture yet (Meluzin *et al.*, 2018). The public equity market plays a rather insignificant role in raising capital and does not provide a realistic picture of variables and "best practices", which are necessary while attracting external investors.

Next, the majority of respondents consider the dividend policy, ability to forecast financial results, stability of company's earnings, flexibility in raising external capital, and capital structure to have a strong impact on the CEC. This result is consistent with established financial theories that view the CEC as a variable reflecting the level of risk (Modigliani and Miller, 1958).

Surprisingly, the other findings in terms of internal factors indicate inconsistency between experience and knowledge of the managers and the theory. Table 10 compares the aggregate research results with recent academic theories and previous empirical studies. For example, the information asymmetry is a key element in capital management and a significant determinant of the cost of equity (e.g. Armstrong *et al.*, 2010). However, one third of the respondents does not know the impact of information asymmetry or assume that this factor has only a minor influence on the CEC. Similarly, the corporate disclosure is considered to be one of the most influential determinants of the cost of equity (Lopes & Alencar, 2010). In our survey, however, only 44 % of the respondents strongly agree that stronger disclosure reduces the cost of equity. The post-transition type of economy connected with an underdeveloped capital market and a

lack of innovations and progressive mind-set my serve as an explanation of the fact that 32 % of the respondents consider corporate governance as a rather unimportant factor that lowers the cost of equity. The same explanation can cover the low agreement rate for corporate ethics (only 16 % of strong agreement). Factors such as financial performance and company size (36 % and 28 % of agreement respectively) are not linked to the financial market characteristics. Furthermore, the statistical tests show that there is a lack of knowledge about the impact of financial structure, disclosure, corporate governance, shareholder rights, information asymmetry, liquidity, flexibility in internal financing, and investor protection. We explain these findings again by a lower degree of development of the Czech financial market in comparison to the well-developed US and Western European markets.

Thirdly, the findings in regard to the external factors indicate a significant gap in of system-relevant knowledge among the interviewed CFOs. First of all, sovereign debt, which theoretically should indirectly influence the cost of equity (see e. g. Miklaszewicz, 2016; Houben *et al.*, 2004; Shinasi, 2004), is not a relevant factor from the Czech CFOs' point of view. On the other hand, the interest rates influencing the CEC directly achieved the highest scores of agreement. Moreover, the respondents could not indicate the direction of the impact of external determinants on the CEC. An equal spread among values could be indicated for determinants such as the gross domestic product growth, domestic currency appreciation/depreciation, sovereign default probability, sovereign rating, inflation of raw materials, risk free rate, probability of banking system default, banking capital adequacy, banking system liquidity, and corruption. In defence of our respondents, the influence of external factors is difficult to evaluate as for most of them the impact is indirect and even scientists struggle to conduct research with clear significant results.

Table 10

Theories and Survey Conclusions

Theory or previous empirical study	Internal factors	Rationale behind the theory or empirical results	Survey conclusions
Armstrong *et al.* (2011)	Information asymmetry	There is a positive impact of information asymmetry on the cost of equity.	*Medium support*
Modigliani & Miller (1958), Guedhami & Mishra (2009)	Capital structure, ownership structure	There is a positive impact of excess control on the cost of equity.	*Medium support*
Lopes & Alencar (2010)	Cost of equity and disclosure and the cost of equity	There is a significant negative association between disclosure and the cost of equity capital.	*Medium support*
Lambert *et al.* (2007), Chen *et al.* (2011)	Quality of accounting information, audit quality	The accounting information takes a direct impact on the cost of capital. A high quality auditing significantly reduce the cost of equity.	*Low support*
Rakow (2010)	Earnings forecast characteristics, very good financial performance	Forecasts with more information content or timelier forecasts lead to the lower CEC.	*Strong support*
Tran (2014)	Corporate governance	Stronger corporate governance leads to the lower CEC.	*Medium support*
Choi (2012)	Corporate ethics	The relationship between corporate ethic and the CEC is negative.	*Low support*

Note: The verbal description of "survey conclusions" in the last column (strong, medium or low support) was expertly determined based on the share of respondents marking the particular "support" category. If a five-point scale was used and more than 50.00 % of respondents marked 4 and 5, we conclude that the factor received strong support. If more than one third of respondents marked 4 and 5 (but less than 50 %), we conclude that the factor received medium support. Low support stands for such results if 4 and 5 were marked by less than one third of respondents.

Conclusions

We surveyed 40 Czech CFOs to document their perceptions and knowledge on the cost of equity determinants with special attention to the practices. To our knowledge, the impact of exogenous determinants on the cost of equity has not been investigated before thus the obtained results provide unique knowledge and a basis for further investigations.

We conclude that the findings are only partly in agreement with the established academic theories and indicate a need to cast new light on the investigated issues. Summing up, the country specifics, in particular the level of the macroeconomic development and the development of the local financial market, seem to influence the awareness of practitioners in regard to the impact of the firm-specific and overall-economic factors on the cost of equity significantly. The mere influence and its degree, however, vary.

While the survey methodology enables us to receive direct insights expressed by the managers, it may be also a source of some limitations. The first limitation is the sensitivity and confidence of gathered data. In general, the Czech CFOs are not open to share information that might take influence on their earnings if it becomes publicly available. Thus, we believe that our response rate of 5 % is really valuable and that our survey findings represent a unique contribution to the current level of knowledge in the Czech economic environment. Another limitation of this study concerns the fact that the CFOs are just a small share of all decision makers; additionally, we conduct a survey among enterprises that operate in a favourable overall-economic environment, which might have influenced the respondents' perspectives.

This study provides valuable implications for corporate managers as it provides much needed empirical data on the actual CEC management in Czech enterprises. This knowledge is important given that there is no comparable

study on this topic. The key question is what tools of economic policy should be used in order to improve the theoretical knowledge and experience of Czech CFOs in regard to a better CEC management? Next, recounting in depth the determinants of CEC management will allow financial market participants to formulate incentives focused on improving the legal environment and attracting more companies to public and private equity markets in the specific conditions of the Czech Republic. This may result in a focus on increasing the efficiency of financing choices in Czech business environment.

In a follow-up research, we aim to enlarge our data experiment and implement our research approach in other countries within the Central and Eastern European region.

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