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**RISK PROPENSITY OF CORPORATE FINANCIAL  
EXECUTIVES: CROSS-COUNTRY COMPARISON**

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## INTRODUCTION

A national economy is a complex system with tightly integrated financial, industrial and demographical processes. When dealing with such a complex system, it is impossible to make forecasts that will precisely reflect the real economic situation in the future. Despite many different opinions and theories, when discussing deviation in the economic context, risk has to be considered.

We live in an era where information has become one of the most valuable assets for any company, investor or politician. Information about the future is priceless. No one can be certain about the future, but one can try to predict events, trends, indicators, etc., with different levels of probability. When discussing probability, once again, risk has to be taken into account.

The first chapter of this paper is dedicated to risk, risk propensity, risk perception, and risk-taking behavior in an economic setting, offering a review of literature and synthesized definitions of these notions.

There are various definitions of 'risk' in social, mathematical, and economic sciences, however this paper will concentrate on its financial meaning. Risk has been widely studied by a large number of mathematicians and economists. Section 1.1. will reveal and summarize the definition of 'risk' given by Markowitz (1952), March and Shapira (1987), Garland (2003), Frankfurter *et al.* (2002), and Ricciardi (2007). In this section compared are two main financial schools: normative and positive. The first one (Markowitz 1952; Neumann and Morgenstern 1947; Savage 1954), based on the assumption of rationality of economic agents, suggests measuring risk in relation to the expected return (Portfolio theory, Capital Asset Pricing Model). On the contrary, the school of behavioral finance implies limited rationality of economic agents and subjective risk assessment. The core theory in behavioral finance is the prospect theory of Kahneman and Tversky (1979).

The main part of section 1.1 is dedicated to the characteristics of risk-aversion and risk-taking as two building blocks of risk propensity. This section will compare and discuss the works of MacGrimmon and Wehrung (1986; 1990), March and Shapira (1987), Roszkowski and Davey (2010), Moreschi (2005), and Lucarelli and Brighetti (2010).

The first chapter will present the critics of the “homo economicus” theory, which considers individuals to be rational. Section 1.2 will reveal biases, heuristics and paradoxes in the judgments of economic agents, based on the work of Sitkin and Pablo (1992), Gilovich *et al.* (2002), Korobkin and Guthrie (2004), Shefrin (2007), Hackbarth (2008), Akert and Deaves (2010), Fairchild (2005), Heaton (2002), Graham and Harvey (2010), and Moon (2001).

The review of literature on risk will show that research in this area has been completed mostly using statistical data from stock markets in the USA and studying individual investors' behavior (Ricciardi 2007). Significant amount of research has been concerned with investment portfolios, stock market fluctuation, and companies' dividend policy. However, modern finance is not limited to the stock market as various businesses become involved in financial relations through investment projects, loans, capital structure strategies, etc. In these organizations the financial executives are usually responsible for the financial decisions, and their views on financial issues form the financial strategy of the company, as well as influence the national economic climate. It is considered to be important to study financial behavior of the chief financial officers in different business environments. This problem is especially topical in the light of the financial-economic crisis of 2008, as it has shown the consequences of irrational and risky decisions of economic agents. Understanding of the factors that influence risk propensity, as well as compiling a profile of the key decision-makers' risk preferences, might help to make better financial forecasts on the micro-level of a single firm and the macro-level of a national economy.

The theoretical concept of this study is based on the works of Sitkin and Pablo (1992), Graham *et al.* (2010), Sitkin and Weingart (1995), Weber and Milliman (1997), and Rohremann (2005). The paper introduces The Circular Model of Risk Perception that shows interrelation between risk propensity, risk perception and risk behavior, and their dependence on external factors, such as context, framing, personality, etc. The Circular Model of Risk Perception is presented and explained in section 1.4.

There are not many research studies on risky behavior of financial executives. Section 1.3 outlines the most significant studies for this paper, including MacGrimon and Wehrung (1986), Shapira (1986), Sullivan (1997), and Broomiley (1991). These and several other works have provided a basis for the design of the practical component of the current study.

The second chapter is dedicated to empirical research. Presented are an analysis of business environment in Ukraine, Estonia and Sweden, as well as the design and conclusions of the research.

Research has been carried out among chief financial officers (CFOs) and chief executive officers (CEOs) of companies in Ukraine, Estonia, and Sweden. Such companies as Tere AS, Salvete AS, Rapo AS, Radisson Resort Hotels, Sranfy, “ATC”, OÜ Õliühing, Trendwood, SA Võru Spordikeskus, Nimbell AB, Binar AB, Duego Technologies AB, «Синергия Инвест» and others have taken part in the research.

Three countries were chosen as they represent different stages of economic development. Sweden – an old European country with stable economy, Estonia – a post Soviet country that has successfully revolutionized into market economy, and Ukraine – a country with transitional economy moving towards market. Objective data from the International Finance Corporation (IFC), The World Bank, and the European Commission were used to analyze and compare economic conditions in the three countries. This is the first study into the differences in attitudes of financial managers towards risk carried out in several European countries.

Author hypothesizes that business environment, organizational norms and culture would define risk propensity of managers. The aim of the thesis is to find out similarities,

differences and patterns of risk propensity of financial executives in different business environments by comparing financial executives relative risk propensity in Estonia, Sweden and Ukraine. Following objectives are set in order to reach the goal:

- to analyze existing concepts of risk-taking behavior in economic setting;
- to develop an aggregated theoretical framework of risk propensity;
- to provide an analytical overview of previous studies;
- to develop a questionnaire that allows to assess risk propensity of executives within the scope of a financial problem;
- to present an overview of business environments of the three countries to comprise a profile of financial executive in Estonia, Sweden and Ukraine;
- to compare risk-taking preferences between executives in three different countries.

In this paper six pairs of hypotheses and suggestions on risk propensity of financial executives are tested. Questionnaire analysis has been completed and presented using graphical, statistical and mathematical methods.

This paper introduces new factors related to problem framing that might influence the decisions of executives; such as general economic situation, previous performance of the company or the status of the market competition. Managers have to express their professional opinion about different investment opportunities for their firms in the conditions of either economic growth or recession. It is implied that from the financial point of view, the most important category is the value of the company. This is the first study where the outcomes of decisions are related to the changes in business value. Results from the questionnaire are compared across the different countries, and contrasted with the results of previous research. Conclusions, limitations of the study, and proposals for further research are discussed in the last section of this paper.

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# **1. RISK PROPENSITY IN FINANCIAL DECISION- MAKING PROCESS: THEORETICAL APPROACH**

## **1.1. Risk-taking behavior of individuals in economic setting: risk-taking versus risk avoidance**

In the middle of the 18<sup>th</sup> century, a famous French economist Richard Cantillon (1730) introduced a new term ‘entrepreneur’ into economic analysis. He described an entrepreneur as an independent risk-taking businessman. Cantillon (1730) mentions that some of the entrepreneurs get rich and “gain more than double their subsistence”, although “others are ruined and become bankrupt” (Saucier and Thornton 2012: 44-46). The risk here is related to uncertainty, “especially from competition and changing tastes” (Saucier and Thornton 2012: 55).

Entrepreneurs have to make various decisions about resource allocation, pricing products and services, manufacturing possibilities, etc. As in any normative science, classical microeconomics have provided a range of theories that describe how rational people and firms have to make decisions that bring the most value to them and society (maximizing gains (utility) in the condition of limited resources). ‘Homo economicus’ with his ‘Utility function’ is one of the main paradigms in microeconomics that assumes individuals to be rational (follow axioms of rationality), having full information and being able to express order of their preferences or exact utility of each good (Dwivedi 2002: 119). Nevertheless, in real life, information is never distributed equally among economic agents and no one owns full information. Further development of the utility theory took into account the ‘uncertainty effect’ in the form of risk. It is important to mention here that ‘uncertainty’ and ‘risk’ are not synonyms. Risk can be measured using probability but uncertainty cannot be (Ackert and Deaves 2010: 7).

The ‘expected utility theory’ developed by von Neumann and Morgenstern (1947) extends the concept of ‘rationality’ by implying that individual preferences can be presented by the function of expected utility that is based on subjective probabilities. Neumann and Morgenstern (1947) based their theory on the work of Jacob and Bernoulli, famous mathematicians of the 18<sup>th</sup> century (Nicholson and Snyder 2010: 209-216). According to Bernoulli (1738), the expected value  $E(X)$  is a sum of all possible outcomes ( $x_k$ ) multiplied by probabilities of their occurrence ( $p_k$ ):

$$(1) \quad E(X) = x_1p_1 + x_2p_2 + \cdots + x_kp_k$$

Bernoulli (1738), in turn, proposed utility to be a logarithmic function of wealth:

$$(2) \quad u(w) = \ln(w)$$

Savage (1954) proposed the ‘subjective expected utility theory’, which states that a decision preferred by an individual depends on his or her subjective utility function and beliefs about probability (Nicholson and Snyder 2010: 209-216). In the field of finance these concepts were reflected in the Modern Portfolio Theory of Harry Markowitz (1952: 77-91). Markowitz (1952) developed one of the basic investment theories that provides methods of analyzing securities portfolio based on their expected return and risk (standard deviation). An investor can choose whether to minimize risks given the expected rate of return or maximize the expected return given the level of risk.

Until 1979, when “Prospect theory: And analysis of decision under risk“ by Daniel Kahneman and Amos Tversky was published, economic decision-making had been normative, and had tried to find new instruments for people to use in their decision-making process (Bell *et al.* 1988, Keeney *et al.* 1993). Prior to that publication, several works had studied psychological aspect of decision-making, e.g. Gustave le Bon (1896), Selden (1912), Festinger (1956), and Pratt (1964).

Kahneman and Tversky (1979) revolutionized economic science with their experiments on decision-making, criticism of the expected utility theories, and statements saying that people are far from being rational. Consequently, the prospect theory (Kahneman and Tversky 1979) was developed and became a point of departure in the development of Behavioral Economics and Behavioral Finance.

According to March and Shapira (1987), risk in financial science is most commonly defined as “reflecting in the distributions of possible outcomes, their likelihoods, and their subjective values” (March and Shapira 1987: 1404). The alternative with larger variation would be considered riskier as risk and expected value are important inputs in decision-making between alternative gambles.

A distinction can be made between ‘objective’ risk that has been scientifically proven based on statistical and mathematical calculations (for example betas, calculated by Standard & Poor’s) and ‘perceived risk’ based on subjective impressions. Although people frequently have to deal with risky situations they have never experienced before, there is no statistical data or expert judgments on these issues, at the same time attitudes towards risk are also not logical. Frankfurter and George (2001) assume that there is “much more to risk than finance has begun to consider, and much of it involves how people form images of the events of which they are expected to assess the risk” (Frankfurter, George 2001: 456).

Garland (2003) in his work “The rise of risk” emphasizes that risks as such are a “product of future-oriented human calculations – assessments made by people in the face of an uncertain world and the possibilities that it holds for them”. Risk is tightly bounded with uncertainty, where individual possesses only limited knowledge about future events, mostly based on predictions, guesses, and probabilities (Garland 2003: 49-85).

Garland (2003) assumes that risk could be managed on a micro level as “the uncertainties faced by firms are not truly random events” (Garland 2003: 20) because some patterns of human behavior can be predicted to some extent, for example demand levels, consumer attitudes, exchange rates, and production costs. Although this statement is arguable, especially after the financial and economic crisis of late 2008 that was unexpected for majority of firms, institutions, and households. In fact, the crisis was caused by inaccurate, overoptimistic calculations of risks, general tendency for underestimating level of risk in small-probability events, and overconfidence of the main players in financial markets (Roszkowski and Davey 2008). It can be argued that previous economic growth, growth of gains, market shares, etc., resulted in expecting the same tendency to continue in future (inertia); therefore economic agents were overestimating the probability of positive outcomes of their financial decisions.

That is why it is so important to study not only risk itself, but also risk propensity of the organizations' key decision-makers. In microeconomic settings key decision-makers are company executives who define corporate strategy, debt policy, capital structure etc. The assembly of such firms and their strategies form trends and tendencies of the national economy as a whole.

There are several recent studies dedicated to risk propensity and risk perception of households (Roszkowski and Davey 2010; Gärling *et al.* 2009). The main purpose of these studies was to show that people should get at least general financial education in order to be able to assess risk and make smaller number of irrational financial decisions. At the same time financial institutions themselves have to change the model of their risky behavior and be more focused on sustainable development than risk-taking and speculation. Roszkowski and Davey (2010: 42-53) argue that there is a strong need to differentiate and determine financial terms that describe willingness to take an action in the condition of uncertainty; among them 'risk tolerance', 'risk acceptance', 'risk appetite', 'risk attitude', 'risk profile', and 'risk propensity'.

Based on the investment vocabulary (Business dictionary; Investopedia; Ricciardi 2004; Rohrmann 2005, 2008), the following definitions related to risk in economic context were aggregated:

- risk propensity,
- risk tolerance,
- risk perception,
- risk behavior.

Risk propensity shows the degree to which an entity is willing to take chances with respect to risk of loss. It is a general tendency (as a mindset) towards taking or avoiding risk when deciding on how to proceed in situations with uncertain outcomes (also called risk attitude). In other words, risk-taking and risk-aversion are two contrary characteristics generally called 'risk propensity'.

Risk propensity was the main research subjects in the work of MacCrimmon and Wehrung (1986; 1990), Sitkin and Pablo (1992), Sullivan (1997), Wayne *et al.* (2001), Miner and Raju (2004), and others. Various studies have proven that depending on

individual risk propensity there are differences in people’s reactions and behaviors in situations involving risk (MacCrimmon and Wehrung (1986), March and Shapira (1987), Frankfurte *et al.* (2001), and others. Individuals who prefer relatively lower risk, called risk-averse, might sacrifice some of the expected return if that would lead to decrease of variance of the return. On the contrary, the risk-seeking people would prefer higher return variance, while prepared to sacrifice some of the expected return (March and Shapira 1987: 1406).

MacCrimmon and Wehrung (1986) proposed general characteristics of a ‘risk-taker’ and ‘risk-averter’. They are presented in the table 1.1 below.

**Table 1.1.** Characteristics of Risk Averters and Risk Takers

<b>COMPONENTS of risk</b>	<b>Risk Averter REQUIRES</b>	<b>Risk taker ACCEPTS</b>
Magnitude of potential loss	Low maximum loss Low stakes, commitment Low variability in payoffs More information on losses More control over losses	Higher maximum loss Higher stakes, commitment Higher variability in payoffs Less information on losses Less control over losses
Chances of potential loss	Low chance of loss Familiar environment Few uncertain events More information on chances More control over uncertain events Low uncertainty	Higher chance of loss Unfamiliar environment Many uncertain events Less information on chances Less control over uncertain events Higher uncertainty
Exposure to potential loss	Low exposure Shared responsibility More information on exposure More control over exposure	Higher exposure Sole responsibility Less information on exposure Less control over exposure
Other risk components	Control by self Contingency plans Consensus Exit from risky situation	Control by others No contingency plans Conflict Participation in risky situation

Source: MacCrimmon and Wehrung (1986: 19)

The one who tries to avoid risk would choose opportunities that have low maximum loss and low variability in payoffs. He or she would require more information about potential losses and their likelihood, as well as would act more willingly in a familiar environment, where he or she has more control over the results. More often he or she

would prefer not to take risk and exit the risky situation. On the contrary, a risk-taker can accept higher variability in payoffs and higher losses. He or she is not afraid of acting in an unfamiliar environment, with less information and control over the outcomes. He or she can take responsibility and even accept conflicts, rather than always require consensus. Risk-taker would be willing to participate in a risky situation. The propensity to take or avoid risk plays a key role in the perception of risk and decision-making process.

Risk tolerance is a term very closely related to risk propensity (sometimes a substitute). It defines the capacity to accept or absorb risk, or in the ‘portfolio theory’ – the degree of uncertainty that an investor can handle in response to a negative change in the value of his or her portfolio.

According to Roszkowski and Davey (2010), risk tolerance is a fixed trait, but it can still be influenced by life circumstances and psychological conditions. The study showed that, for instance, risk tolerance of individuals was not affected by the crisis of 2008, despite the change in risk perception. However, these conclusions are subject for further investigation, as the study was based on self-assessment. Moreschi (2005) and Lucarelli and Brighetti (2010) show that individuals usually fail to evaluate their risk tolerance appropriately because of biased judgment. For instance, individuals who assume that they are risk-avoiders might exhibit risk-taking behavior in the situations involving uncertainty and risk. This phenomenon was called ‘unconscious sleeping factor’.

The key literature presents two points of view on risk preferences. One assumes that risk preferences are stable (Lambert 1986; MacCrimmon and Wehrung 1990; Sitkin and Weingart 1995; Weber and Milliman 1997); another one implies that risk preferences can vary (Kahneman and Tversky 1979; March and Shapira 1992; and Bromiley 1991).

Risk perception is a belief about likelihood, magnitude and/or timing of risk. It could be a rational or an irrational belief, held by an individual, group, or society. Likelihood expresses the chance of occurrence of the event, magnitude – the worst result that can occur and duration of its effect.

Ricciardi (2004) in his work “A Risk Perception Primer: A Narrative Research Review of the Risk Perception Literature in Behavioral Accounting and Behavioral Finance” provides a full chronological literature review and an overview of concepts on such topics as risk and risk perception. Modern theories and models of risk perception can also be found in the studies of Brockma *et al.* (2006), Barberis (2008), and Roszkowski and Davey (2010); all of which emphasize the role of risk propensity of an individual in his or her perception of risk and actual risk behavior (the actual behavior of people in the situation involving risk). Risk behavior has been largely studied by March *et al.* (1987, 1992), Sitkin and Pablo (1992), Gärling *et al.* (2009), Rohrmann (2008) and others.

In any business as a whole and in corporate finance as such risk has a very important place. There are political risks, market risks, interest rate risk, reinvestment risk, liquidity risk, foreign exchange risk, credit or default risk, inflation risk, as well as firm’s specific risks, project risk, financial risk, business risk.

Corporate managers make decisions involving risk every day, while taking bank loans, issuing securities, deciding on Initial Public Offering (IPO) or Mergers and Acquisitions (M&A), or accepting investment projects. In the end all their decisions influence business value. One of the most widely applied risk-assessment techniques is the Capital Asset Pricing Model (CAPM) that takes into account the assets’ sensitivity to systematic (non-diversifiable) risk.

Traditional financial approach also implies the use of discounted cash flow method (DCF) by financial officers in the decision-making process. Evaluation techniques involve inclusion of risk into discount rates (expected return and “objective” risk-betas) applied to expected cash flows. Despite the fact that different agencies, such as Standard & Poor’s and Moody’s, evaluate risks for countries, industries, and separate companies, and publish historical beta values and financial forecasts, the final decision is still made by a CFO (or CEO), and quite often involves more intuition than a quantified approach. It should be noted that there is a large subjective component in the valuation and decision process, as expected (or estimated, perceived) values are discussed. It means that the firm behavior would depend on the decisions made by its financial officers, who, as humans, may be prone to making decisions that may not always be fully rational.

Corporate Finance focuses on two basic groups of financial agents – corporate managers and investors, and creditors and shareholders. In order to understand the decision-making process in concluding various financial contracts, it is important to understand their preferences and beliefs first. While classical theories (Neumann and Morgenstern 1947, Markowitz 1952) assume broad rationality of agents, their unbiased forecasts, as well as given market efficiency and precise reflection of information in the prices of financial instruments behavioral finance discusses these issues (Baker *et al.* 2005). A significant part of behavioral finance is also dedicated to exploring of financial markets, corporate and individual investors. Core theories in this area are: limits of arbitrage, market efficiency, noise trade, implementation costs, etc. (Barberis *et al.* 2001, Fama 1998, etc). This paper does not discuss the aforementioned theories as its focus is on another branch of behavioral finance - ‘irrational managers’ approach that is closely covered in the next section.

## **1.2. Irrationality of managerial decisions: biases, heuristics and other effects**

Studies show that top corporate managers (CFOs, CEOs) can be focused on risk-taking, or be risk-averse; depending on their position towards risk, they might perceive risks in different ways. At the same time, there is evidence of pitfalls that usually prevent ordinary people and managers from making fully rational decisions and applying theoretical techniques correctly (Shefrin 2007: 2).

Gilovich *et al.* (2002), Korobkin and Guthrie (2004), Shefrin (2007), Hackbarth (2008), and Akert and Deaves (2010), discuss general heuristics and biases of managers and their influence on financial and strategic decisions. Fairchild (2005), Sunder *et al.* (2009), Simon, *et al.* (2002), Graham and Harvey (2010) have carried out research into managerial overconfidence and optimism. Moon (2001) dedicated his works to the causes and consequences of the ‘sunk cost effect’.

This paper presents an aggregated list of the most common psychological phenomena that demonstrates irrational behavior of managers:

1. Biases: excessive optimism, overconfidence, confirmation biases, illusion of control.
2. Heuristics: representativeness, availability, and affect.
3. Framing effects: loss aversion, aversion to a sure loss.

Bias is a “predisposition towards error” (Shefrin 2007: 2), illogical or inaccurate judgment. Recent research by Graham and Harvey (2010) has shown that managers tend to be more optimistic than other people; in other words, more predisposed towards excessive optimism bias. They overestimate how frequently favorable outcomes will occur and the same time underestimate the frequency of negative (unfavorable) outcomes.

Excessive optimism can lead to “delayed cost cutting during business recession” that may result in poor financial performance of the firm (Shefrin 2007: 2-5). This bias might affect managers’ investment judgments, so that they will believe that some projects are better than they really are and overinvest (Heaton 2002). At the same time, as they believe that the company’s securities are undervalued, they might not issue new securities to finance projects with positive net present value (NPV) and underinvest (Heaton 2002). More optimistic managers will be less willing to finance projects by external fund raising (Heaton 2002: 35). They generally prefer ‘pecking order’ capital structure – with first preference for internal equity, second for straight (risk free) debt and last for a new entity of any form (Harris and Raviv 1991; Graham and Harvey 2001). All in all, excessive optimism of CFOs and CEOs results in value non-maximizing, or even in value decreasing behavior.

Overconfidence (Slovic 1964; Tversky *et al.* 1974; Moore *et al.* 2007) is another bias commonly widespread among financial managers. Overconfidence is a belief of a person that he or she is better (above average) than others, often resulting in mistakes being made more frequently (Shefrin 2007). Scientific literature shows men to be more prone to overconfidence and risk-taking than women (Schubert *et al.* 1999). A recent theory developed by Moore and Healy (2007) distinguishes three different ways of describing overconfidence: overestimation of one’s actual performance, overplacement of one’s performance relative to others, and excessive precision in one’s beliefs.

Due to overconfidence bias managers might underestimate risks, ignore evidence of failure, and believe that they can do better. This leads to accepting negative NPV projects, providing destroying M&As, and reducing business value (Roll 1986; Shefrin 2007).

Fairchild (2005: 20) shows that overconfidence can bring to a “positive effect by inducing higher managerial effort”. On the other hand, Hackbarth (2008: 861) found that mild biases can play a positive role and bring an increase in the firm’s value, “because higher debt levels commit the manager to pay out free cash flow ameliorating manager-shareholder conflicts”.

Previous studies have shown mixed results about how overconfidence influences capital structure of a firm. Fairchild (2005) and Hackbarth (2008) show in their models that overconfident managers prefer to use debt financing (Fairchild 2005). At the same time Sunder *et al.* (2009: 22) state that “debt financing is relatively more expensive for the overconfident CEO and he is likely to face restrictions on subsequent financing”, so he or she would use less debt. Nevertheless, overconfident and overoptimistic people are usually “happier, more popular, more motivated and willing to help others” (Hackbarth; 2008: 876). However, overconfidence does not mean overoptimism, it emphasizes the belief that the individual point of view whether optimistic or pessimistic is correct, it is related to the inner “tune” of the person.

Managers usually focus on the evidence that confirms their opinions, and are more likely to ignore the facts that contradict their opinion. They search for information that supports their beliefs, instead of searching for contradictory information. This pattern called ‘confirmation bias’ leads to an incomplete picture and may consequently result in faulty decisions (Nesma 2010) and decreased profits because of a delayed reaction on changing environment (Shefrin 2007).

Langer (1975) introduced the ‘illusion of control’ phenomenon to psychological and economic science. According to the findings of Langer’s (1975) experiments conducted among 631 participants, the ‘illusion of control’ is the “expectancy of a personal success probability inappropriately higher than the objective probability would warrant” (Langer 1975: 313). According to Montier (2007: 22), illusion of control refers to people's belief that they have “influence over the outcome of uncontrollable events”.

From the managerial point of view “illusion of control” is a belief “that conventional controls, like operating standards, profit targets and budgetary criteria accurately and validly measure and determine behavior” (Marti *et al.* 2004: 83-96). This leads managers to overestimate the extent to which they can control future events, which may leads to higher than necessary costs (Shefrin 2007). March and Shapira (1987) showed that managers perceive risk as a controllable event that might be managed. That results in underestimating risks and overly optimistic prognosis of future cash flows, project pay-back time, etc.

Heuristics are ways, methods, and rules that make decision process easier. People might not be aware of the fact that they are using heuristics as they do it on a cognitive level. Simon (2003), Kahneman and Tversky (2002), Griffin and Kahneman (2002) and others, have published key research on heuristics. Studying heuristics is very important for the understanding of financial decision-making process. Financial decisions are based on different assessments of occurring of the events: increase in earnings, interest rates prognosis, research and development (R&D) project success (Akert and Deaves 2010: 90-91). Managers also make their judgments using heuristics, relying on stereotypes and analogues (Shefrin 2007). This kind of heuristics is called ‘representativeness’. According to Kahneman and Tversky (1979) people make judgments about the probability that event A belongs to process B, by the degree to which A resembles B. Shefrin (2007) defines ‘representativeness’ as reliance on stereotypes and shows that it can lead managers to wrong forecasts on investment projects and reducing the company value. For example: if IT companies dealing with application software (or Internet-based services) have low costs in first stages, then they are most likely to grow fast and shift to decline phase quite quickly. Relying on such a stereotype, a manager may underestimate project pay-back time, underestimate resources and time needed for development and engagement of significant market share, for example in an Internet-based medical service.

In modern behavior finance term ‘representativeness’ was replaced by ‘attribution-substitution’ (Kahneman and Frederic 2002) or prototype heuristic and similarity heuristic. Gilovich (Heuristics and Biases: The Psychology of Intuitive Judgment 2002) notice that ‘representativeness’ was considered in two different meanings; on the one

hand a prototype that represents the category and, on the other hand, the way it resembles the category stereotype. In order not to mix with or misinterpret the term it was divided into two different heuristics.

Information is the key component in decision-making, allowing to make any predictions or judgments. For that reason, before making a decision one would seek some facts and knowledge on the topic. Nowadays, it is very easy to get a piece of information from radio, TV, Internet, etc. The availability heuristics is a tendency to use the most available, easily accessible or familiar information. For instance, when asked whether more people die because of terrorist attacks, hurricanes and tsunamis or because of asthma, most people would choose the first one. They are exposed to more information about disasters than about regular illnesses, and that influences their judgments (Gilbert 2004). The availability heuristics leads to ‘recency’ and ‘salience’ biases, where people choose recent or widely spoken events as most representative (Akert and Deaves 2010).

Managers also apply this heuristic and rely on information that is more ‘readily’ available, or that they can recall more easily. Recent research (Kliger and Kudryavcev 2010: 50-65) has shown that a revision of analyst recommendation affects investors’ reactions in uncertain conditions. The availability heuristics might lead to the choice of wrong investment projects and reducing of the firm’s value, because of not accurate estimation of risks and misjudged priorities (Shefrin 2007).

People usually form their opinions in relation to some reference point or initial number. In corporate context managers may make quick assessments based on an initial number they are familiar with, for example last year’s corporate growth or Price to Earnings (P/E) ratio, and then adjust it to reflect new information. Kahneman and Tversky (1974) called this pattern ‘anchoring and adjustment’ heuristic. Relying on this heuristics, managers would undervalue the difference between known and unknown value (Korobkin and Guthrie 2004: 744). It would consequently bring them to insufficient adjustments and biased growth forecasts that might result in reduction of the firm’s value (Shefrin 2007).

In the edited version of the book “Heuristics and Biases: The Psychology of Intuitive Judgment” by Gilovich *et al.* (2002), ‘anchoring and adjustment’ was replaced by

‘affect’ heuristic on the list of most common heuristics, while Shefrin (2007) question this change and consider the ‘anchoring and adjustment’ heuristic to be of great importance.

According to Gilovich *et al.* (2002: 470), the affect heuristic is more connected to emotions and intuition when people do what ‘feels right’. Similar tendency can be found in managers who invest in the projects that they feel will be a success, sometimes without a formal analysis. This behavior can reduce the firm’s value because of accepting projects with a negative NPV. Several experiments have shown that this heuristic is applied more intensively in stressful circumstances, for example under time pressure (Finucane *et al.* 2000).

The expected utility theory assumes that people make consistent choices that are not influenced by external factors, although Tversky and Kahneman’s (1974 1979 2002) research findings have shown that this rule is violated by real-life human behavior. Kahneman and Tversky (1974) come to the conclusion that people show risk-aversion when making choices involving sure gains, and risk-seeking preference when making choices involving losses both in cases of monetary and non monetary problems (more thoroughly this is discussed in subchapter 1.3). Individuals are also predisposed towards ‘loss aversion’ - it is a feature describing people’s greater sensitivity to wealth reduction than to its increase, in other words it refers to people’s tendency to strongly prefer avoiding losses to acquiring gains.

Therefore choices might be manipulated by framing of the problem – gains versus losses, as well as personal versus business problems. Shapira (1986) and MacCrimmon and Wehrung (1986) have shown that people might accept higher risks when dealing with business decisions and, on the contrary, they show risk-averse behavior in questions that concern their personal life and finance. Hence, we should also clarify the term ‘framing’. Ackert and Deaves (2010: 14) define ‘frame’ as “decision-maker’s view of a problem and the possible outcomes”. The frame is affected by three factors: presentation, person’s perception of the question, and personal characteristics. This paper will address this definition as ‘broad framing’. On the other hand, Kahneman and Tversky (1974), Sitkin and Pablo (1992) refer to ‘framing effect’ or ‘problem framing’ only as to the presentation of the problem; this paper will use the definition of ‘narrow

framing'. In further discussion both definitions will be used and the next section will also investigate interrelation of the three aforementioned factors.

Heuristics and biases usually appear together as they are tightly related to each other. For instance, aversion to loss together with framing affect leads to 'sunk cost fallacy', also known as "throwing good money after bad" (Shefrin 2007).

The 'sunk cost effect' describes a situation where an investment project exceeds its budget and schedule, net present value of that project is no longer positive, and yet managers continue investing in its completion (Teach and Jones 2004). Managers mislead themselves into believing that 'sunk costs' are recoverable and so 'aversion to sure loss' encourages them to try to finish the project (Roxburgh 2003).

Conlon and Garland (1993) in their work "The Role of Project Completion Information in Resource Allocation Decisions" suggest that sunk cost fallacy has to be divided into two different variables: already invested money (sunk costs) and the degree to which project was completed (project completion). Conlon and Garland (1993) have shown that if these two variables are considered separately, sunk costs will not play a significant role, as project completion rate would cause dominant influence on the final decision. However, Moon (2001) showed that "as the level of sunk costs increases, a decision-maker will be significantly more willing to invest further into a progress-related project" (Moon 2001: 106). On the other hand, the second hypothesis that stated "as level of completion increases, a decision-maker will be significantly more willing to invest further into a progress-related project" was also confirmed. Although there are still no studies that clearly show the interaction of these two variables, Moon (2001) has elaborated several functions that might explain this mechanism.

Conlon and Garland (1993) also considered the effect the information about competitors' product would have on sunk costs and project completion. However, the study did not show the evidence that information about competitors' influence on decisions on resource allocation. One of the limitations of this research lies in the fact that it was conducted among students, not practicing managers. Authors suggest that in order to make specific conclusions, the same research has to be done on a sample of managers.

Understanding of all the previously mentioned “pitfalls” enabled various researchers (Conlon 1993, Garland 2003, Shefrin 2007, Moon 2001) and financial specialist (Roxburgh 2003, Teach 2004 etc) to develop suggestions and different techniques for managers to enable more rational and higher quality decisions. This research focuses on the CFOs and CEOs with economic education and assumes that they must know and be able to apply risk-assessing techniques. At the same time it is assumed that, due to different risk propensities, there will be significant differences in the financial decisions of managers.

### **1.3. Measurement of risk propensity of economic agents – previous studies and approaches**

This chapter is dedicated to the most significant research on risk-taking behavior, as well as to the recent studies in the fields of risk perception, risk tolerance, and risk propensity of managers. Hereby works of Kahneman and Tversky (1974), MacCrimmon and Wehrung (1986), March and Shapira (1987), Shapira (1997), Sullivan (1997), Bromiley (1991) are discussed.

Kahneman and Tversky (1974) conducted several studies among students in order to explore whether their decisions were rational. They used a modified version of Allais choice-problems, where participants had to choose between several alternative variants of winning money (denoted as m. u. – monetary units). One example of the choice problems is presented below:

Problem 1. Choose between 2 alternatives:

A: Gain 2,500 m. u. with probability 0.33	B: Gain 2,400 m. u. with certainty
Gain 2,400 m. u. with probability 0.66	
0 m. u. with probability 0.01	

Weighted gains:

A:  $(2,500 \times 0.33 + 2,400 \times 0.66 + 0 \times 0.01) = 2,409$ ;      B: 2,400

In this problem weighed gains are 2,409 m. u. for variant A and 2,400 m.u. for variant B (according to formula 1 and 3).

According to the axioms of rationality, people should choose variant A that has higher weighed gains, but 82% of the study participants made an irrational choice and chose alternative B.

Problem 2. Choose between 2 alternatives.

A: 2,500 with probability 0.33	B: 2,400 with probability 0.34
0 with probability 0.67	0 with probability 0.67

In this problem weighed gains are

$$A: (2,500 \times 0.33 + 0 \times 0.67) = 825 ; \quad B: (2,400 \times 0.34 + 0 \times 0.66) = 816$$

82% of participants chose variant B, which seems to be logical, as it has higher weighted gains. But when participants' choices are rewritten as preference equations, it can be seen that they are controversial:

Problem 1.

$$u(2,400) > u(2,500 \times 0.33) + u(2,400 \times 0.66),$$

Equation might be modified in the following way:

$$u(2,500 \times 0.33) < u(2,400) - u(2,400 \times 0.66),$$

$$u(2,500 \times 0.33) < u(2,400 \times 0.34)$$

Problem 2.

$$u(2,500 \times 0.33) > u(2,400 \times 0.34).$$

In Problem 1 the alternative of gaining 2,500 m. u. with probability of 33% was less preferable, than gaining 2,400 m. u. with 34% probability, while in problem 2 result was contradictory.

Several more experiments have shown that more than half of the respondents violated expected utility theory. Kahneman and Tversky (1979: 265) called this phenomenon 'certainty effect'; which shows that "people overweight outcomes that are considered certain, relative to outcomes which are merely probable". Although in the situation

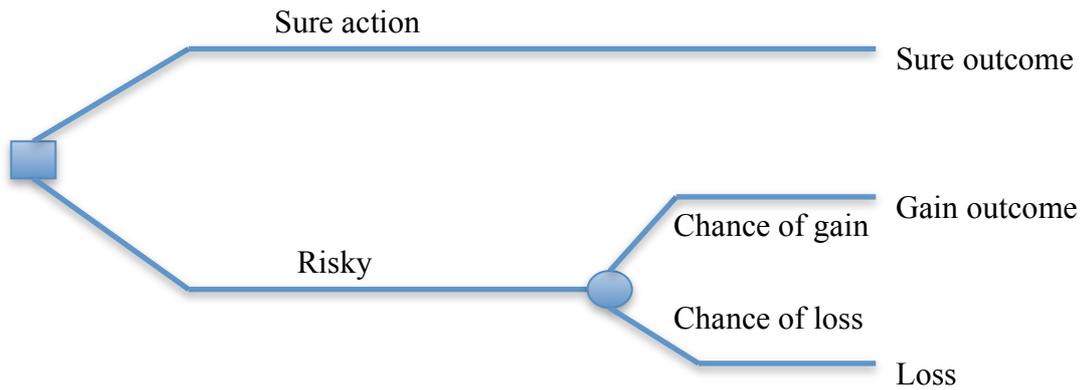
when gains were replaced by losses Kahneman and Tversky (1979) received different results. For instance, 92% of respondents preferred to incur losses of 4000 with probability of 80% to the certain loss of 3000, in spite of the fact that weighed loss in the first variant exceeded 3000. This pattern was named “reflection effect”.

In their prospect theory, Kahneman and Tversky (1979: 271) also indicated the ‘isolation effect’: “In order to simplify choices between alternatives, people often disregard components that the alternatives share, and focus on the components that distinguish them”. This effect appeared in the experiment, where participants were asked to consider a two-stage game:

- 1<sup>st</sup>. stage:        0.75 probability of winning nothing and finish game  
                         0.25 probability to go to the second stage
  
- 2<sup>nd</sup>. stage:        0.8 probability of winning 4000  
                         gaining 3000 for sure

Participants had to make their choice in the 2nd stage before they knew the results of the 1<sup>st</sup> stage. 78% chose the variant of gaining 3000 on the second stage, thus it was concluded that people ignored the first stage of the game and made choice just between 0.8 probability of winning 4000 or gaining 3000 for sure; and again variant “for sure” was more preferable. Although, when considering the final (two stages in total) probabilities, the choice should have been made between probability of  $(0.25 \times 0.80) = 0.2$  to win 4000 and probability of  $(0.25 \times 1.0) = 0.25$  to win 3000. When the problem was presented in that way, 65% of respondents chose the first opportunity (4000, 0.2).

MacCrimmon and Wehrung (1986) offer the ‘basic risk paradigm’ (Figure 1.1) that formalizes a situation, where a person has to choose one out of two possibilities, where one of them is a ‘sure action’ – decision that doesn’t change situation, and another – ‘risky action’ that has two possible outcomes: gain or loss. Thus decision-maker does not know which one will occur and has only probabilistic knowledge. The basic risk paradigm might be presented as a decision tree:



**Figure 1.1.** Basic risk paradigm (MacCrimmon and Wehrung 1986: 12)

Hence, expected (weighted, average) value of the ‘risky action’ can be calculated as:

$$(3) \quad E(v) = (1-p) \times G + p \times L ,$$

where  $p$  – chance (probability) of loss (L),

$(1-p)$  – probability of gain (G).

In their turn, Kahneman and Tversky (1979) proposed two phases of the choice process:

- 1) editing,
- 2) evaluation and decision-making.

Editing is based on simplifying the problem and includes the following operations:

- Coding – perceiving outcomes as gain and losses, rather than as final welfare.
- Combination – prospects are simplified by combining probabilities associated with identical outcomes. For example (200, 0.25; 200, 0.25) can be transformed into (200, 0.5).
- Segregation – separation of riskless component. For example two alternatives (300, 0.8; 200, 0.2) are equivalent to setting (200, 1.0; 100, 0.8) where one of the choices does not contain risk.
- Cancellation – discarding of common components.
- Simplification – rounding of probability outcomes.
- Dominance – rejecting of dominated alternatives without further evaluation.

Kahneman and Tversky (1979) studied behavior of students who rarely find themselves in a situation involving financial risks. One can assume that financial managers with relevant education would behave more rationally. This assumption would not be 100%

correct as, in spite of the fact that CFOs have various instruments (mathematical, statistical, etc) to analyze risks and expected returns they still make very different decisions and usually rely upon intuition, but not solely on numbers.

In 1986, MacCrimmon and Wehrung (1986) organized a study among top-level business executives (509 participants), in order to investigate the relationships between risk-taking propensity and variety of different socio-economic characteristics (MacCrimmon and Wehrung 1990: 422) of top managers. Risk propensity was found to be a very complex attribute that depends on different variables and conditions, so different aspects of personality have to be taken into account when assessing risk propensity. MacGrimmon and Wenhrung (1986) studied five dimensions: socio-economic profile (age, education, income, etc), self-appraisal of risk-taking, standardized problems including risk (see the table 1.2), real behavior in situations involving financial risk, and personal and business decisions.

**Table 1.2.** Standardized problems in MacGrimmon and Wehrung (1986)

Standardized problems	Description
1) Risk In-Basket	Examines the individual risk propensity, risk adjustment, choice between risky and sure alternative. Has high degree of realism. Example: the president of a subsidiary asks whether (s)he should settle a patent violation suit out of court or whether (s)he should fight the case (chances and losses are defined).
2) Investment gambles	Examines risk tolerance in risky situations. Example: a manager has to specify what ROI should investment project have, so that he would give up “sure” alternative on favor of “risky” one.
3) Risk return rankings	Examines risk perception. Example: a person has to rank 9 alternatives for investing 10% of his wealth. Rate of return and variance rate of return is provided.
4) Real money wagers	Ranking of alternatives (4 risky and 1 sure). Person has a real chance to win or lose money.

Source: Compiled by author

Questionnaire results were coded and analyzed using statistical methods such as correlation, discriminant analysis, factor analysis, etc., to prove a hypothesis that there

are “systematic differences between risk takers and risk averts on any socioeconomic dimensions” (MacCrimmon and Wehrung 1986).

After analysis the following conclusions were presented:

- 1) people with greater success (income, savings) take greater risks;
- 2) more mature managers (older, fewer dependents, longer stay in the position in one company) and managers in banks take lower risks;
- 3) there is a difference in personal and business decisions: managers take business risk with greater willingness, and show stronger risk-aversion in the decisions involving their personal wealth;
- 4) there is a greater willingness to take risks in the situation of threats rather than faced with opportunities;
- 5) research has shown strong propensity towards risk-aversion among top managers;
- 6) managers simplify the problems and use only part of the information given to make a decision;
- 7) the study found some evidence of greater risk-taking among managers of small firms and ventures.

However, MacCrimmon and Wehrung (1986) studies have several limitations. Size of the firm and the industry it is operating in were combined into one factor, and the study contained a disproportional amount of executives from big and small firms, which prevented the analysis from showing any significant results. The research was conducted in the USA and Canada, but it did not show any significant differences between top managers. It can be assumed that business climate and corporate culture in the USA and Canada are very similar and that is why the differences in risk propensity of managers were not significantly influenced by the regional factor.

The present study assumes that the differences in culture and business environment would play a significant role in risk propensity of top managers. The study will include a comparison of three economies that are in different phases of development; mature market economy of Sweden, young and innovative market economy of Estonia, and transitional economy of Ukraine.

In the first chapter the theoretical definition of the term ‘risk’ were discussed. Studies completed by Shapira (1997) shed light on the ways managers understand and perceive

‘risk’ in everyday life. Research has shown that managers associate ‘risk’ only with negative outcomes and not with all possible outcomes (variance). Thus managers perceive alternative as ‘risky’ if it contains hazard (threat) or very poor outcome (March and Shapira 1986: 1407). They also do not consider alternatives as ‘risky’ if they involve small sums of money; in other words, the possibility of losing 10 euros is not risk, but a possible loss of 100 000 euros is a risk, so the amount matters.

Managers see risk as a part of their job, as a synonym to “decision-making under uncertainty” (Shapira 1997: 58). In line with the results of MacCrimmon and Wehrung (1986) findings, Shapira (1997) found that “managers are inclined to show greater risk propensity towards risk-taking when questions are framed as business decisions than when they are framed as personal decisions” (Shapira 1997: 58).

In the interviews carried out by Shapira (1997) and MacCrimmon and Wehrung (1986), the CFOs stressed that smaller risk would be taken when a company is doing well and much riskier choices could be made, if a company is ‘failing’. Although managers were not eager to take risk “where a failure would jeopardize the survival of the firm” (March and Shapira 1987: 1410). At the same time, if there are competitors that could threaten the company’s position, manager has to take risk; but whether it would be risk of ‘not surviving’ or ‘risking new strategy’ is a matter of choice.

March and Shapira (1987) stress that managers distinguish gambles and risk-taking. In gambling odds are determined and uncontrollable; on the contrary, in risk-taking, skills and information can reduce uncertainty. This attitude was proposed to be dictated by society that values ‘good risk-taking’ that leads to success. Conversely, judge gambling was suggested as the synonym to “bad risks” taking (March and Shapira 1987: 1413).

When it comes to research on corporate executives and framing problems as financial decisions, one has to consider the fact that for CFOs and CEOs gains and losses take form of concrete financial terms – profit, revenue, costs, investments, etc. For instance, Sullivan (1997) suggested that when evaluating the cost of investment, project manager might seek for information about the cost of the project and consider revenues that the project will potentially generate. In this situation, positive net return is perceived as

‘gain’ and results in risk-avoiding behavior. Hence, problem framing gains one more dimension – coding of financial data.

Sullivan (1997) conducted five experiments that examined managers risk propensity. The research has extended classical problems of Kahneman and Tversky (1979) by introducing notions such as profits, losses, revenues, costs and expenditures, as well as by complementing problems with ratings of the final choice (participants had to rate strength of their preference in five-point scale). The findings have shown that managers apply more advanced accounting techniques; in the conditions of profit and revenues managers prefer to avoid risk; and, on the contrary, when problems refer clearly to financial losses, they would exhibit risk-taking behavior.

Although Sullivan (1997) framed the problems like specific financial choices there is a possibility of extending Sullivan’s experiments. Problems that were presented in the study were lacking concrete context, hence it can be assumed that external factors, such as general economic conditions or previous financial performance of the company would influence managers’ decisions, as managers should take these factors into consideration when facing a problem in real life.

Bromiley (1991) studied organizational risk-taking and its influence on financial and economic performance of the firm for the strategic management purpose. Bromiley’s (1991) studies show that previous firm performance, financial decisions outcomes and expectations play important role in the future risk-taking behavior of the firm.

The model of risk-taking elaborated in this research is presented below:

$$(4) \text{ Risk}_{t+1} = b_0 + b_1 \text{ performance}_t + b_2 \text{ industry performance} + b_3 \text{ expectations} \\ + b_4 \text{ aspirations} + b_5 \text{ slack} + b_6 \text{ slack}^2 + b_6 \text{ risk}_t + e$$

The analysis was carried out using data on companies’ Return on Assets (ROA), Return on Equity (ROE), Return on Sales (ROS) as performance measures (as all the indicators provided similar results only ROA results were presented in the article). For the industry performance average ROA for the firms was used (firms with a given two-digit Standard Industrial Classification code). Risk was measured as variance in ROA

(around timeline) – ex ante uncertainty of firms earnings streams. Expectations corresponded to the mean of the earnings forecast produced by security analysts. Aspiration combined past performance and industry average performance (firms performing below industry average aspire to average and those that perform above average aspire to improve positions). Slack was calculated as current assets/current liabilities ratio and recoverable slack as selling and all expenses/ sales ratio.

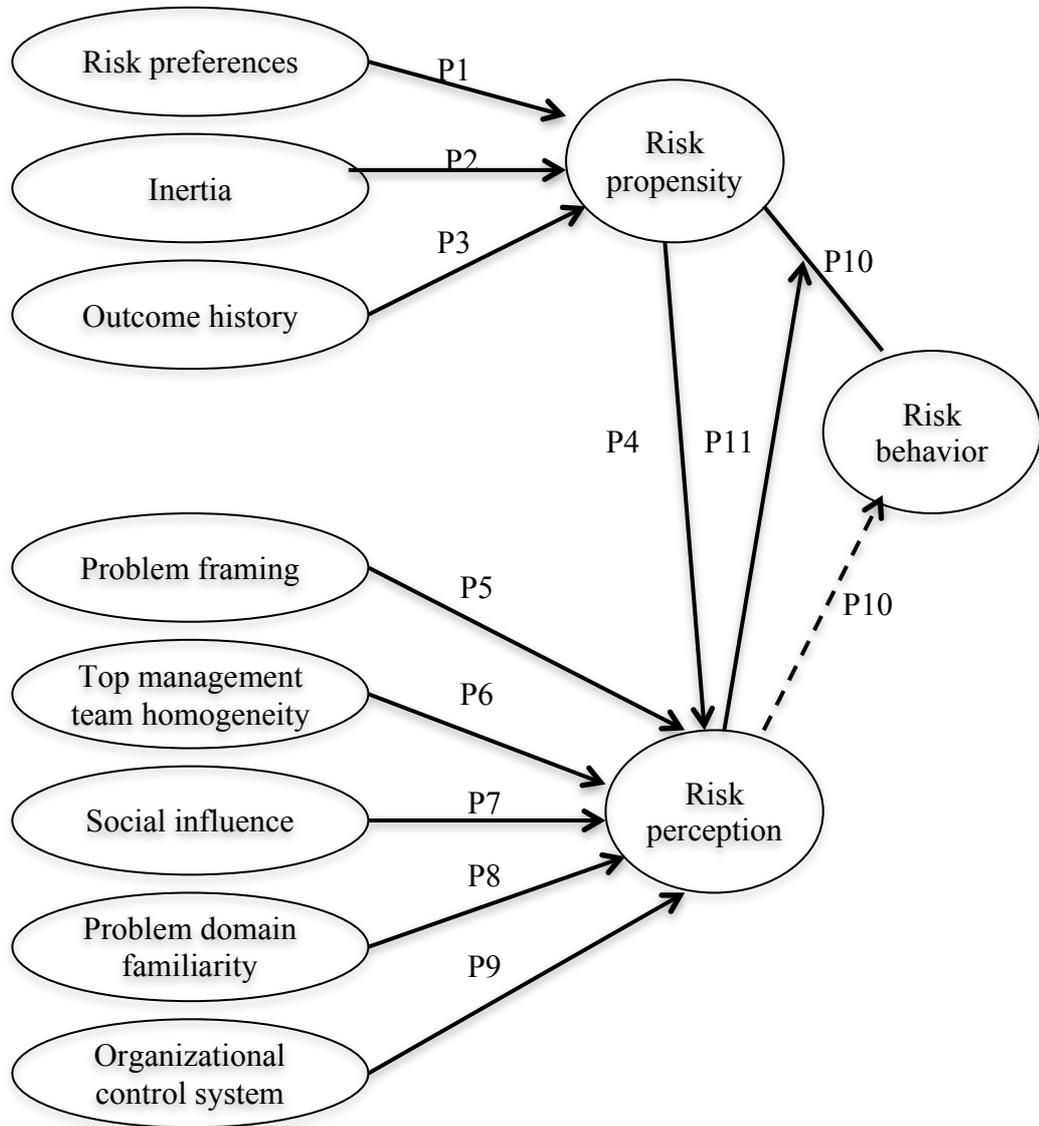
The following conclusions were presented:

- 1) Previous company's performance as well as past industry performance has a strong negative influence on risk-taking (see also Bowman and Singh1993).
- 2) Expectations and aspirations have positive influence on risk-taking: the higher the expectations, the higher risks a company takes.
- 3) Risk has negative influence on performance, as those firms that take more risk show worth performance results.
- 4) Previous risks have positive influence on current risk-taking. This leads to the situation where low business performance results in taking higher risks, and higher risks lead to decrease of the performance.

Bromiley's (1991) research has shown interesting and significant results, although not entirely in the same line with other studies, for instance Singh (1986). However, there are several limitations of the research. One of them is that the study was carried out in one country, so that the behavior of the firms might have been dependent on general economic tendencies. The study was conducted 'from the distance', without collaboration with the managers of the firms. On the one hand this approach was supposed to show objective results, based only on numbers; however, on the other hand, certain decisions are made by particular people and their attitudes towards risk play key role in the final risk-taking behavior. That is why the current study will test several similar hypotheses from the perspective of the managers of the firm and combine them with the design of the research Sullivan (1997).

#### **1.4. The role of risk propensity in decision-making process – an integrated picture**

In the scientific literature there are only several models that describe mutual dependency of risk propensity, risk perception, and risk-taking behavior. One of them is the ‘Reconceptualized Model of the Determinants of Risk Behavior’ by Sitkin and Pablo (1992). They were the first to show the contradiction in different research and theories involving risk behavior. For instance, Kahneman and Tversky (1979) stated that individuals who try to protect their previous gains are risk-averse. On the contrary, Osborn and Jackson (1988) and Thaler and Johson (1990) found that past success brings to willingness to take risks. Staw *et al.*’s (1981) findings also contradict with Kahnemmn and Tversky’s ‘prospect theory’ (1979), which proposes that individuals become risk-averse when they are threatened with losses. Sitkin and Pablo (1992) emphasize that the main reason why previous studies resulted in controversial conclusions was that they were focused on single determinants of behavior, like individual, organizational, or problem-related characteristics. They also anticipated direct influence of those factors on risk behavior. Thereby the authors assume that the influence is indirect, “via mediating mechanism of risk propensities and risk perceptions” of individuals, and they place those notions in the center of the reconceptualized model among eight factors, aggregated from different studies (Figure 1.2).



**Figure 1.2.** Reconceptualized Model of the Determinants of Risk Behavior (Sitkin and Pablo 1992: 15)

In their review of previous research, Sitkin and Pablo (1992) elaborated eleven propositions that describe the influence of different factors on risk propensity, risk perception, and risk behavior.

Propositions 1-3 describe risk propensity determinants that might be assembled into one group of ‘personal characteristics’. For instance, general preferences to take risk or not would be consistent with the risk propensity in the particular situation. Individuals are also predisposed towards inertia in their behavior; in other words, they would handle risky situations in the habitual way. However, risk propensity would depend on the previous outcomes history. Once decision-maker associates his or her success with risk-

averse actions he or she has taken, his or her risk propensity will become even more risk-averse, and vice-versa; successful risk-takers increase risk-seeking behavior. On the contrary, unsuccessful outcomes would lead to changes in the behavior strategy. Thus, the type of experience itself, magnitude and timing (schedule) of the “failure”, plays an important role (Figure 1.3).

Magnitude (Scale of Failure Outcomes)	Timing (schedule of Failure Outcomes)		
		Intermittent	Continuous
	Minor	Experimentation	Random reaction
Major	Escalating commitment	Learned Helplessness	

**Figure 1.3.** The effect of outcome history on the variability of risk propensity (Sitkin and Pablo 1992: 19)

Minor failures would result in increased variability of risk propensity; at the same time major and continuous failures lead to ‘learned helplessness’ and decreased risk propensity variability.

Pablo and Sitkin (1992) presume (proposition 4 and 11) that there is an inverse relation between risk propensity and risk perception. Risk-averse decision-maker will perceive risks to be higher in comparison with risk-seeking individual. The former would tend to overestimate the risk, while latter would underestimate it. Pablo and Sitkin (1992) emphasize five more determinants that influence risk perception of decision-maker, among them: top management team homogeneity, organizational control system, and social influence.

Current study focuses on CEOs and CFOs as decision-makers, in other words key personalities that define corporate behavior, organizational culture, leadership style, etc. Graham *et al.* (2010) study is one of few that explore both personal traits of companies’ executives and specific features of the company, exploring interrelation of these notions. The study uses a number of psychometric tests of CEOs and CFOs and link results to the capital structure and quantity of M&A. The study has shown that the CEO’s personal (behavior) traits, such as risk-aversion, optimism etc. are closely related to the general corporate finance policies, compensation and reward strategy and growth opportunities. In addition Graham *et al.* (2001) found out that the top US managers

generally differ from non-US managers and there are differences in personal characteristics and carrier path of CEOs and CFOs.

The current study suggests that CEOs and CFOs risk propensity would be consistent with corporate values and organizational culture. From the perspective of an international study, organizational culture and determinants such as top management team homogeneity, organizational control system and social influence would be defined by socio-economic properties of the country – cultural aspects, as well as business environment.

The more homogeneous top-management team, the more its individual members will exhibit risk perceptions that are similar and tend to be extreme. At the same time members will be more confident in the accuracy of their own judgment. In contrast, in a diverse management team the average risk perception would be less extreme and its members would exhibit less confidence in their perception. Risk perception of the individuals in the groups would depend upon organizational culture, risk values, and risk behavior (role-model) of the leaders, as well as of the control system. The greater the emphasis on process controls in organizations, the lower the level of risk perceived by decision-makers; the greater the emphasis on outcome controls in organization, the higher level of risk perceived by decision-makers. (Pablo and Sitkin 1992:16)

Wiseman and Gomes-Mejia (1998) formalize behavior of managers within organization, combining the prospect theory with the agency model. They suggested a Behavioral Agency Model Of Managerial Risk-taking (BAM) that describes the dependence of managers' risky behavior on the internal corporate governance and its key elements; incentive alignment and monitoring control. The model implies that an executive manager's risk preferences are displayed through his or her strategic choices.

As mentioned before, problem framing in its narrow definition affects the judgment of an individual. However, different studies show contradictory results in defining nature of the connection. According to Kahneman and Tversky (1979), when the problem is 'positively' framed, individuals perceive risk to be higher than is normally appropriate, whereas 'negatively' framed situations will be perceived as involving lower than normally appropriate level of risk. Although Staw *et al.* (1981), March and Shapira

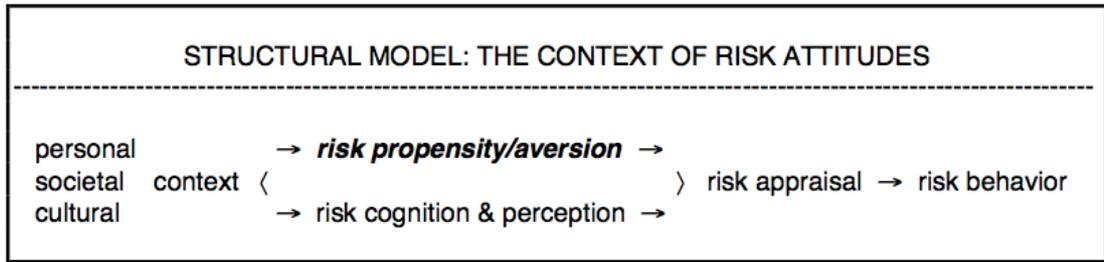
(1987) came to opposing conclusions. Thus, both hypotheses will be tested in the present study.

Problem framing might correspond not only to positive or negative outcomes, but also to the opportunities and threats, or for absolute versus relative outcomes. For instance, modest profit of the company might be considered as a 'loss' in comparison with an outstanding performance of the competitors. Similarly, a 10% decrease of wealth might be perceived differently from the absolute number of loss etc.

Problem domain familiarity mediates personal characteristics of an individual and the essence of the problem. Whether the decision-maker has already been in the particular situation and has applied different techniques for analysis would influence his or her risk perception. Thus, the present study considers the domain familiarity to be one of the personal characteristics that affect risk propensity, along with the outcome history and inertia.

According to Sitkin and Pablo (1992), decision-makers with moderate domain familiarity would have more accurate estimates and moderate level of confidence, as well as stable risk perception. In the follow-up practical test Sitkin and Weingart (1995: 14) proved that risk perception and risk propensity are mediators between different factors (effects) and decision-making behavior. This result was also supported by Weber and Milliman (1997) study. Hence, the real risk behavior is consistent with the risk propensity of decision-maker. If an individual is risk-averse he or she would also exhibit risk-averse behavior. However, risk propensity is negatively connected to risk perception, which means that the "higher decision-maker's risk propensity, the lower the level of perceived situational risk" (Sitkin and Pablo 1992; Sitkin and Weingart 1995). Sitkin and Pablo (1992: 30) also suggest that "the higher level of perceived risk, the stronger the association between risk propensity and risk behavior, except that for risk-seeking decision-makers this effect will reach a limit defined by their propensity".

The "Structural Model: The context of risk attitudes" by Rohremann (2005) also considers risk perception and risk propensity to be two factors that define risk behavior. Both risk propensity and risk perception depend on the context (wide framing) that might be, for example, personal, societal or cultural (Figure 1.4).



**Figure 1.4.** Structural model: The context of risk attitudes (Rohrmann 2005: 4)

The strength of risk propensity or risk-aversion depends on the type of hazard. Rohremann (2005) shows that physical, financial, social risk hazard will result in different levels of risk propensity. Mindset, motivation, and other personal characteristics (impulsivity, sensation seeking, extraversion) influence risk attitudes as well; however, the mechanism of risk propensity’s impact on the actual risk behavior has not been clarified yet.

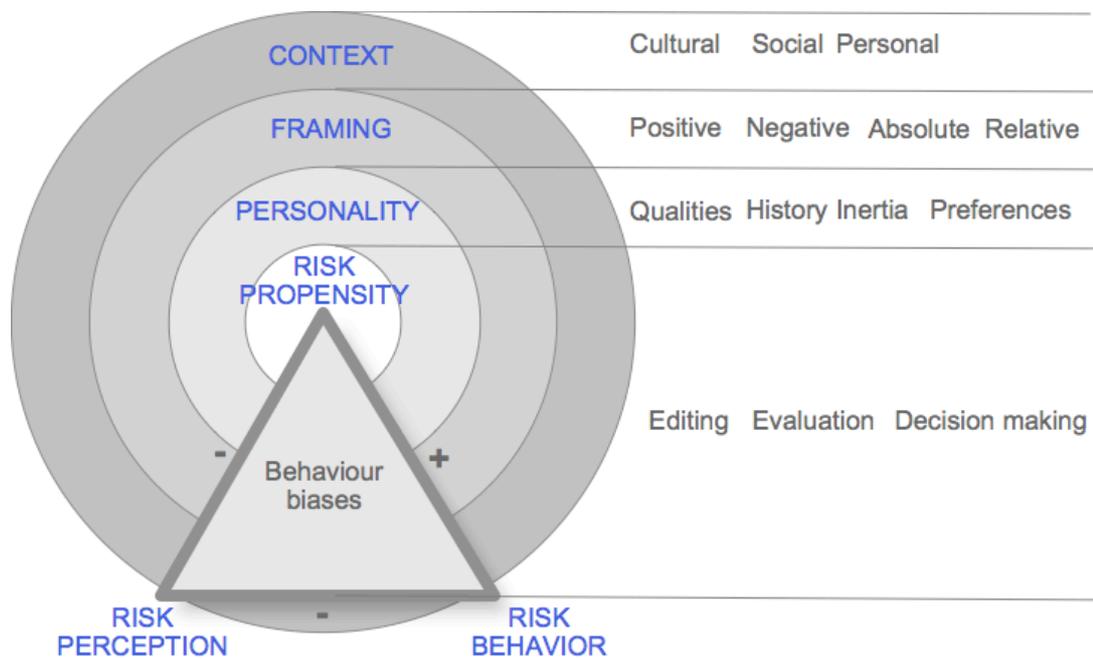
On the contrary, Weber and Milliman (1997: 142) found that “risk preferences may be a stable personality trait” and that change in the risky behavior is caused by the change of risk perception, depending on the situation. They conducted two experiments in order to investigate whether risky behavior of decision-maker would differ, depending on the context – time loss/gain versus monetary loss/gain.

Rohrmann (2005) shows that cultural influence results in different levels of both risk propensity and risk perception of the community members (data collected in Germany, Switzerland, China). International research of Weber and Hsee (1998) also showed significant differences in risk behavior of decision-makers in China, USA, Germany, and Poland. Weber and Hsee (1998) explored the investment context – looking into pricing of risky options by the respondents.

Rohrmann’s Structural Model (Figure 1.4) shows that individual will pass through a ‘risk appraisal’ phase before taking any action. On this phase applied heuristics and biased judgment might result in non-rational behavior.

The “Reconceptualized Model of the Determinants of Risk Behavior” by Sitkin and Pablo (1992); the “Structural Model: The Context of Risk Attitudes” by Rohremann (2005); and the aforementioned research (Kahneman and Tversky 1979; MacGrimmon

and Wehrung 1986; Sitkin and Weingart 1995; Shefrin 2007; and others), were used as a basis for developing the Circular Model of Risk Propensity (Figure 1.5) that shows interrelation between risk propensity, risk perception and risk behavior, and their dependence on external factors. The model is determined by the assumption that external factors do not have exclusive direct influence on the separate elements of risk behavior, but they are related to each other. In other words, each factor has its own affect on every element, whether directly or via mediating role of other elements. Hence the 360 degree model.



**Figure 1.5.** The Circular Model of Risk Propensity (designed by author).

This paper suggests that context (wide framing) would be the most general factor that defines nature of other factors connected to risk behavior. Context is collective notion that includes several layers:

**CONTEXT**

- Country: socioeconomic conditions, culture.
- Problem scope: physical, financial, social.
- Decision domain: personal, household, business, national etc.
- Decision-maker: individual, group.

The present study focuses on the financial problem scope within business domain. It suggests that organizational characteristics should be included into the general context, because organizational characteristics on macro level would depend on the country, its

business environment, business culture, social and business norms. This study, while comparing countries, would focus on general economic conditions, business environment and organizational culture; all these notions are discussed in the next chapter.

Context seamlessly comes to lower level – framing (narrow framing). Framing refers directly to a description of the problem decision-maker is faced with, in academic studies it is influenced by the researcher. However, outside of the academic domain, decision-maker might frame (formalize) the problem himself. Framing includes several alternatives of formulation of the problem (question):

### **FRAMING**

Negative (losses, threats) or positive (gains, opportunities).

Absolute or relative.

With reference point or without.

Other.

The actual risk behavior of the individual would certainly depend on the personality of decision-maker. However, personality is a complex category that among others include following aspects:

### **PERSONALITY**

Social-demographic characteristic: gender, education, family, income etc.

Qualities: extraversion, introversion, optimism, pessimism, perfectionism.

Preferences: certainty, risk, habitual, random.

History: outcome history of previous decisions, experience in certain field, domain familiarity.

Inertia: certain standard way of handling risky situations.

Personality combines various characteristics of individual, but in the current study the most important personality trait is risk propensity that in its turn defines risk perception of decision-maker.

One should take into account that before making an actual decision, individual would assess risks and possible outcomes, in this phase, while editing and evaluating he or she would use heuristics and biased judgments.

Context (both wide and narrow) and personal characteristics would affect risk-taking behavior of individual via mediating mechanism of risk propensity and risk perception.

The risk propensity of an individual can be assessed by analyzing income factors and outcome risk-taking (avoiding) decisions.

Risk is one of the key categories in modern Behavioral Finance. There are many theories that give instruments for objective risk assessment, although decisions, made by economic agents are subjective and usually biased. Risk-taking decisions depend on various factors – context, problem framing, personal characteristics, that were aggregated in Circular Model. Hereby risk-propensity plays one of the most important roles, defining risk perception and risky decisions. An empirical study that investigates cross-country differences in risk propensity of financial executives was designed according to the elaborated Circular Model of Risk Propensity and is discussed in the next chapter.

## **2. RISK PROPENSITY OF CORPORATE FINANCIAL EXECUTIVES IN ESTONIA, UKRAINE AND SWEDEN – AN EMPIRICAL ANALYSIS**

### **2.1. Business environment properties in Estonia, Ukraine and Sweden**

The main purpose of this study is to find out similarities, differences and general patterns of risk-taking behavior and risk propensity of financial executives in different countries. The Circular Model of Risk Propensity introduced in the previous chapter suggests that in order to get a full picture of the research ‘context’, and to be able to make assumptions on the influence that economic characteristics would have on economic agents, one should investigate properties of the country where the research takes place. The current paper will compare countries through three dimensions, whereas differences within these dimensions would affect not only the general way of doing business, but also personal characteristics of economic agents, such as risk propensity:

1. General economic conditions: level of the development of market economy and its institutions, socio-economic and political stability, openness of the economy and its dependence on world trends;
2. Business environment: ease of doing business, access to financial resources and investment opportunities, rule of law and transparency;
3. Organizational culture: power distance, individualism vs. collectivism, masculinity versus femininity, uncertainty avoidance, long-term orientation, management and control.

Current research was completed in three countries: Sweden, Estonia and Ukraine. These countries were chosen as they represent three different types of economies (see the

Table 2.1 below). Sweden has highly developed market economy and is one of the strongest and eldest Western European economies. Estonia has successfully passed through transition from centralized economy and now it represents young, very open, innovative and growing market economy. Ukraine has not yet finished transformation into full market economy and a lot of market institutions and mechanisms are still being developed.

**Table 2.1.** Sweden, Estonia, Ukraine – cross-country comparison of economic conditions and business environment

<b>General economic conditions</b>	<b>Sweden</b>	<b>Estonia</b>	<b>Ukraine</b>
Socio-political stability	High	Medium	Low
Risks	Low	Medium/Low	High
Level of development of market economy	High	High	Medium
Openness of the economy	High	High	Medium
Economic competitiveness	High	High	Low
Economy growth	Stable/ Medium	Unstable/ High	Unstable/Medium
<b>Business environment</b>	<b>Sweden</b>	<b>Estonia</b>	<b>Ukraine</b>
Level of economic freedom	High	High	Low
Easiness of doing business	High	High	Low
Level of investment freedom	High	High	Low
Transparency level	High	Medium	Low
Protection by rule of law	High	High	Low
Government interfering in economy	Medium	Low	High

Source: Compiled by author

Sweden is both politically and economically stable, however due to its openness (Bryant 2012) it has suffered as a result of the world financial declining trends twice during the last 20 years. Sweden has successfully recovered from the financial crisis of 2008 (IMF 2011; Bryant 2012) and has established the Financial Stability Fund in order to prevent future shocks. All economic institutions are highly developed and stand out due to efficiency, transparency, trust and strength (WEF 2011). Swedish knowledge and innovation-led economy is considered to be one of the most productive and competitive in the world (WEF 2011). It also has the highest credit rating AAA (S&P 2011), which shows its ability to cover all liabilities. In such conditions, where macro-economic risks are low, and the economy is stable and growing, companies feel more secure and are

more certain about the future. Therefore, it is suggested that managers of Swedish companies would tolerate risk, feeling insured against losses, and would show a higher level of risk propensity than managers from less stable countries.

Estonia differs from other Baltic and Eastern European countries by the high level of competitiveness of its economy (WEF 2011), due to healthy public finance, stable financial institutions, developed labor and goods market, as well as development of technologies and education. Since 2006 it had been among the world's fastest growing economies until the financial crisis hit the country, and it is predicted to be leader in economic growth in Eurozone (Ernst & Young 2011). Joining Eurozone resulted in absorbing the risks of the European sovereign-debt crisis. However, Estonia received high credit rating AA (S&P 2011) due to its economic growth and solid public finance (Bloomberg 2011). Estonia is a very open country, dependent both financially and trade-wise upon other European Union countries (Finland, Germany, Sweden, Latvia and Lithuania) and Russia. Estonian companies have experienced both positive and negative sides of openness of the economy. On the one hand, Estonian companies received access to financial resources, credits, investments and grants from the European Union (EU) that stimulated high economic growth. In addition, Estonia got financial help and backup by biggest Swedish banks during crisis. On the other hand, unexpected limitation of external monetary inflow to the country resulted in a sharp decline of Gross Domestic Product (GDP), growth of unemployment and strong credit problems. Although Estonia is politically stable, historically it has had a very cautious relationship with the Russian Federation. The aforementioned conditions may affect companies and their managers who would feel less secure than Swedish executives and exhibit higher levels of anxiety that would result in relatively more risk-averse behavior.

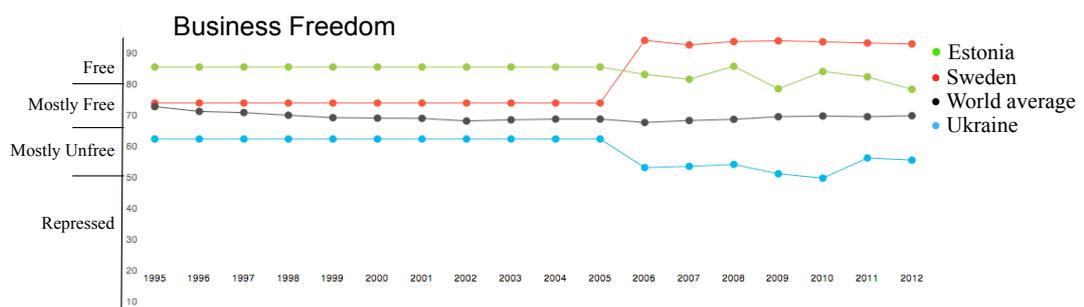
The EU and the USA granted market economy status to Ukraine at the end of 2005 (KMU 2005); however, until now not all institutions of market economy have been developed. The latest reports of The Heritage Foundation (IEF 2012) show that Ukraine's economy is on the 163rd position out of 165 countries according to economic freedom and is categorized as "repressed economy". Market institutions are not independent and transparent, and around 40% of economy is "in shade" (Янукович: 40%... 2011). Ukraine is also politically unstable, as during the last eight years Ukraine

has experienced revolution and various political shocks. Ukrainian managers name political instability as one of the major factors constraining business environment (IFC 2008). Ukraine's economy is highly dependent on the Russian Federation, as well as on the financial help from the European Funds and the World Bank. The EU and WTO integration process is still unclear for Ukraine and it is characterized by high level of uncertainty. Standard&Poors (2012) assigned "highly speculative" credit rating (B+) to Ukraine. On the other hand, Ukraine has high growth potential, due to big consumer market, expected reforms in land law, efficient labor market, and WTO perspectives. Unstable macroeconomic situation and other business threats make Ukrainian companies work in conditions of high uncertainty, it can be suggested that managers would try to avoid risks and exhibit risk-averse behavior in order to minimize risks.

Healthy business environment in a country would facilitate company development and a guaranteed reduction of business risks. In contrast, unstable and unhealthy business conditions would create barriers, uncertainty and additional risks for business development. Managers of companies are used to working in specific business conditions of their country, they look at business tasks and problems through the prism of their experience. That is why it is important to compare business environments in the countries in order to understand the differences in risk propensity and risky choices of managers in the three countries. This study will discuss most recent data and will look into trends of the last 10 years.

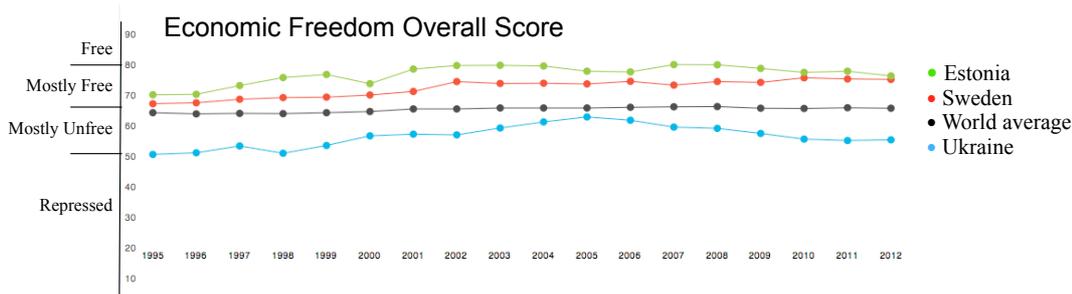
The International Finance Corporation together with the World Bank carries out annual research in 183 world economies in order to measure business regulations and the ease of doing business. Sweden's 14<sup>th</sup> position in 2012 indicates that there are no regulation barriers that prevent companies from development and growth. For instance, only three procedures and fifteen days are required to start a new business and the rules of getting all required licenses and permits are clearly defined (Doing business 2012). Sweden has a high index of economic freedom (71.9 out of 100) and it is ranked 21<sup>st</sup> among 179 countries (IEF 2012). It has a high level of investment freedom, meaning that financial resources are moving within and out of country without barriers. The rights of small investors and minority shareholders are well protected (Doing Business 2012), and in 2011 the Swedish government implemented several changes that have strengthened

investors protection. Although the Swedish court system is reliable and independent, the complexity and duration of the process of resolving commercial disputes is higher than average in the Nordic region. Sweden has lower position (54<sup>th</sup>) than Estonia [29<sup>th</sup> in the “enforcing contracts” ranking (Doing Business 2012)]. However, corporate risks in Sweden are relatively lower than in Estonia, and much lower than in Ukraine, due to a strong rule of law, high transparency of transactions, and protection of property rights. Sweden is one of the least corrupted countries in the world, scoring 92.0 out of 100, where 100 stands for “totally free from corruption” (TI 2010; IEF 2012). This shows that Sweden is a country with secure and stable environment, where private investors and corporate rights are well protected. Business environment has not changed significantly during past decade, although slight liberalization and an increase of law protection have taken place (Appendix 1), resulting in increasing business freedom (Fig. 2.1).



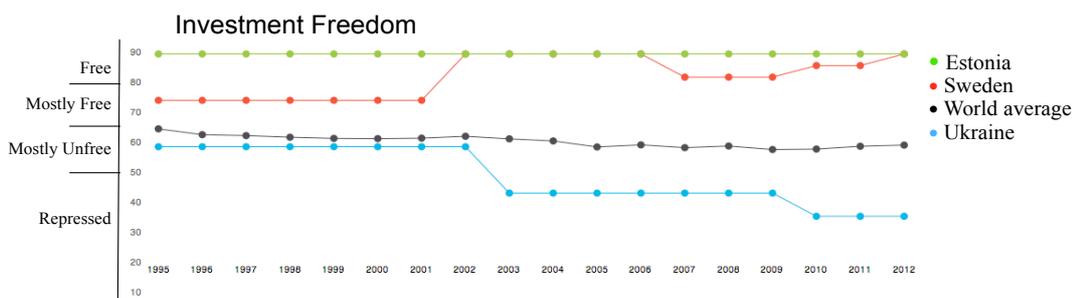
**Figure 2.1.** Estonia, Sweden and Ukraine – Business Freedom Rank, 1995-2012 (IEF 2012)

Estonia has the 24<sup>th</sup> position in the Doing Business ratings (2012), showing very good results in simplifying different procedures in starting a business and registering property, at the same time procedures connected to obtaining licenses and construction permits are still relatively complicated. However, Estonia has a higher rank than Sweden in the Economic freedom ratings (Fig. 2.2), due to the limitation of the government presence in economy. In addition, Estonia has a lower rate of government spending, as well as lower tax rates (IEF 2012; Doing Business 2012).



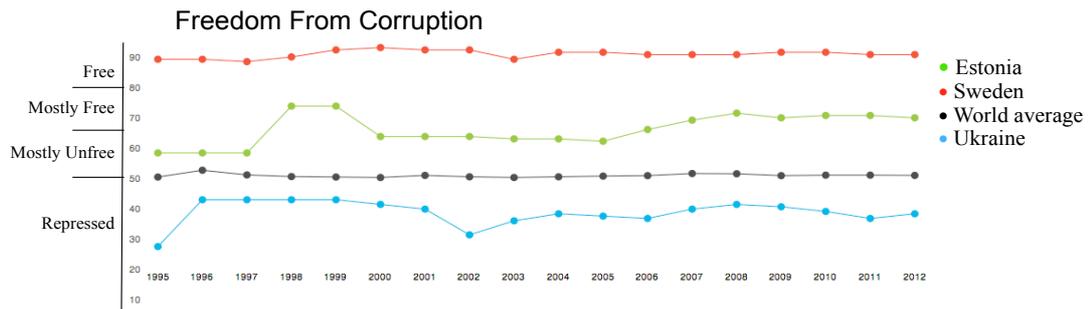
**Figure 2.2.** Estonia, Sweden and Ukraine – Economic Freedom Rank 1995-2012 year (IEF 2012)

Investment freedom in Estonia is as high as in Sweden (Fig. 2.3), making nearly no distinction between foreign and national investors, as foreign capital is crucial for Estonian economy.



**Figure 2.3.** Estonia, Sweden and Ukraine – Investment Freedom Rank, 1995-2012 year (IEF 2012)

Protection of the investors is still relatively low (rank 65) and no significant reforms have been made in recent years (Appendix 1). However, Estonian investors and owners of the companies are eager to reinvest into development of the firms due to special taxation system, as undistributed profit is not taxable. The Estonian court system is independent; there is a secure and transparent procedure of enforcing contracts. During the last 7 years Estonia has shown good results in fighting corruption (Fig. 2.4), but it is still not as free from corruption as Sweden (CPI 2011 – rank 24 and 4, respectively).



**Figure 2.4.** Estonia, Sweden and Ukraine – Freedom from Corruption Rank 1995-2012 year (IEF 2012)

Generally Estonia has a healthy business environment, with various reforms introduced during the last decades to help to establish solid institutions and to simplify bureaucratic procedures, as well as to insure free movement of goods, capital, and labor across borders. Small and open economy proved itself to be a very flexible and adaptive to external shocks. After several years of recovery from the financial crisis, Estonia has come back to stable growth positions.

Unlike Estonia, Ukraine has not shown significant progress in providing effective business environment. Because of weak protection of property rights, widespread corruption and an increase in the government role in economic processes, Ukraine reckons among countries with repressed economies (Fig. 2.2). Bureaucratic procedures are very complicated and costly, tax codes have been adopted only recently and it still demand a lot of improvements, loans are very expensive, and there are nearly no other forms of financing business, land law has not been adopted yet. During the recent years the government’s interference in business has increased by introducing price regulations, influence on prices through state owned companies (IEF 2012), and broadening tax authorities. Central Bank and juridical institutions are strongly influenced by the government. According to the IFC and the World Bank (Doing Business 2012) Ukraine has the worst rating in the areas of receiving construction permits and paying taxes (ranks 180 and 181 out of 183). Starting a business, registering property, and resolving insolvency ranks are ranked extremely low as well (112 166 156 place among 183 countries).

Absence of the success of reforms might be caused by widespread corruption (Fig. 2.4). According to the Transparency International (TI 2010; 2011) corruption perception index (CPI) in Ukraine scores only 2.4, which indicates widespread perception of corruption. Enterprise survey (IFC 2008), held by the IFC and the World Bank in 2008, showed that 50% of companies perceive corruption to be the main constraint for business.

The Heritage Foundation (2012) ranked Ukraine as 163<sup>rd</sup> (among 179 economies) by economic freedom. After several years of liberalization and improving trends in economy in 2002-2005, Ukraine returned back to positions of 1998 (Fig. 2.2). The worst situation is with investment freedom that has declined significantly in the past three years (Fig. 2.3), as investment framework is undeveloped and investors' rights are poorly protected (IEF 2012; Doing Business 2012). The above facts describe Ukrainian business environment as unhealthy, containing a lot of risks because due to insufficient legal protection of property and investments, poor availability of financial resources for majority of firms, and numerous barriers for foreign capital trying to reach Ukrainian companies, etc. In such conditions it is unclear what level of risk propensity Ukrainian managers would have. The present study suggests that risk propensity of Ukrainian managers would be either extremely risk-averse, or extremely risk-taking. Several hypotheses will be tested in the study.

Sweden, Estonia and Ukraine differ not only on the economic level but also on the socio-cultural level, and that might also influence risk propensity of managers. Pablo and Sitkin (1992) suggested that the top management team homogeneity and organizational control system would influence risk perception, Hofstede (2001) noticed that uncertainty avoidance is unequally distributed within different cultures, Rohrman (2005) showed that the cultural context determines risk propensity of individuals, Graham *et al.* (2010) found that managers with different levels of risk propensity join companies with different reward and compensation systems. Based on these and other findings it can be suggested that in order to obtain a complete picture of differences and similarities between the countries, it is important to explore the corporate culture in Sweden, Estonia and Ukraine. The extended Hofstede 5-Dimensions model is used as the base for cross-country comparison (Table 2.2).

**Table 2.2.** National Cultural Dimensions: Sweden, Estonia, Ukraine

Dimension	Country		
	Sweden	Estonia	Ukraine
Power Distance (PDI)	Low (31)	Low (40)	Low (22.8)
Individualism vs. Collectivism (IDV)	Individualism (71)	Individualism (60)	Collectivism (31.5)
Masculinity vs. Femininity (MAS)	Femininity (5)	Femininity (30)	Femininity (-8.7)
Uncertainty Avoidance (UAI)	Low (29)	High (60)	Low (4.8)
Long-term Orientation (LTO)	Short term (20)	N/A	Short term (4)

Source: geert-hofstede.com (2012), Pylypenko *et al.* (2012).

Power distance is defined as “the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally” (geert-hofstede.com). All three countries score low on this dimension, indicating a tendency to joint decision-making and low dependence on supervisor. Swedish companies prefer flat corporate structure with hierarchy only for convenience; managers are differentiated by the level and field of work, rather than by pure hierarchic status. Leaders in the companies play the role of ‘coaches’ and acknowledge employees to be better specialist in their field (geert-hofstede.com; WBC 2012). Control in Swedish organizations is weak and power is highly decentralized; attitude of employees towards supervisors is relatively informal. Decisions in companies are based on consensus and involve all members of the group in the decision-making process.

Power Distance Index (PDI) in Estonia is higher than Sweden, due to the fact that Estonia has only recently finished its transition from a centralized economy; thereby the subordinate relationship in the companies are more hierarchic, especially among older generation. However, Estonians welcome managers who give them the opportunity to take part in the decision-making process, and to express their opinion and disagreement.

In Ukrainian companies decisions are made by top-managers and their decision power covers all levels and areas of business; hierarchic corporate structure assumes both indi-

vidualistic decisions of executives and their sole responsibility for the results (Siegfried and Langer 2007). However, according to Pylypenko *et al.* (2012) Ukraine has a low power distance score of 22.8. Research suggests that the low score is determined by the fact that Ukrainians are reluctant to recognize and accept power due to historical conditions (Ukrainian land belonged to different states for a long period). These results confirmed previous studies by Mitry and Bradley (1999), where PDI for Ukraine was estimated to be around 23, but Spector *et al.*'s (2001) study showed a higher score of 45, which suggested propensity to more hierarchic relations within organization.

Sweden has a high IDV score (71) that describe Swedish culture as individualistic. Managers do not receive direct instructions, are free in their actions and judged according to their achievements. Relationships within an organization are contract-based and for mutual advantage; promotion and hiring decisions are made solely on the base of merit. Estonia is also an individualistic country with quite high IDV index (60). Personal responsibilities and own achievements are highly valued among Estonians; managers are mostly task-oriented rather than relationship-oriented and relations serve functional purpose (geert-hofstede.com). Ukraine belongs to collectivist cultures, where feeling of "belonging to group" plays an important role. Personal relations, connections and network are more important than other professional characteristics. Managers associate themselves with the company and take all business results personally.

All three countries have low MAS score that describes them as feminine societies. However, Estonia has relatively higher masculinity index (30), indicating higher propensity towards competition, achievements, and judging by success. Nevertheless, Estonia is a feminine country, where individuals do not 'boast' about their achievements rather they let results 'speak for themselves'. Estonians are reluctant to raise problems and they tend to avoid conflicts. In Sweden, very low masculinity score shows the importance of equity, compromise, and balance between work and life. Conflicts at work are resolved by compromise, negotiations and discussions. The extremely low MAS index in Ukraine might be caused by the important role of women in the history, religion and culture (Pylypenko *et al.* 2012). Feminine culture reflects in the importance of good relations and cooperation within an organization, as well as a relation-oriented management style.

Uncertainty avoidance shows propensity to accept uncertainty or attempt to manage and influence future; it reflects “the ability of society to overcome alarm and stress caused by uncertainty” (Pylypenko *et al.* 2012). Sweden has a low Uncertainty Avoidance Index (UAI), showing low preference to avoid uncertainty. Swedes have more relaxed attitude towards uncertainty, for them practice counts more than principles. Organizations are very opened towards innovations and deviation from norms is easily tolerated (geert-hofstede.com). Very low UAI in Ukraine reflects the tendency of being reluctant towards rules and procedures, inclination to take risks, and low resistance to changes. On the contrary, Estonia has high preference to avoid uncertainty, relying on rules, clear guidelines and work descriptions. Estonians are careful about taking risks and do not like ‘to rush’ into making decisions. Sweden and Ukraine are short-term oriented cultures, exhibiting respect for traditions, relatively small propensity to save and impatience for results. Pylypenko *et al.* (2012) stated that in the conditions of high political, social and economic instability in Ukraine there is a clearly defined tendency ‘to live for the day’. LTO index has not been calculated for Estonia; however, lecturer Tõnis Saarts (Tallinn University 2009) names Estonia as a short-term oriented society, so one can assume that Estonia would have similar characteristics to Sweden and Ukraine within this dimension.

The cross-country comparison has shown that despite different history, Sweden and Estonia have comparable economies and business conditions that encourage and secure business development, investments and entrepreneurship. Transparent and well-established institutions, free access to financial resources and the rule of law decrease unsystematic risks for the companies. On the contrary, the unstable political, economic and social conditions in Ukraine, together with weak development of market institutions, unclear ‘rules of the game’, non-transparent juridical and fiscal institutions, weak protection of property rights, and laborious access to finance, all create difficult, unhealthy and risk-laden business environment.

From the organizational culture point of view, Sweden is more liberal and open than Estonia and Ukraine. Flat structure, consensus, group decisions, equal rights, risk tolerance, openness towards innovations are the key notions that describe the Swedish corporate culture peculiarities. Organizational culture in Estonia is diverse, both hierarchi-

cal and democratic structures are widespread; however Estonians do not respect ‘positions’, but deeds and achievements. Management style is task-oriented, with respect for rules and procedures that provide feeling of confidence in the future. The role of success, competitiveness and self-fulfillment is relatively greater than in Sweden, although demonstration of superiority is also strictly unwelcome. Ukrainian corporate culture is clearly relations-oriented, where personal connections play an important role and being part of the group is essential. Being used to high uncertainty, Ukrainian managers are tolerant towards risk and used to having the responsibility for making decisions.

## **2.2. Design of the study and respondents’ profile**

Several previous studies compared risk attitudes of managers in the USA, Canada, Asia and Europe; however, the current study is the first one to compare risk propensity of financial executives in European countries after the global financial crisis. There are only a limited number of studies targeting top-management of companies; most research on behavioral finance has been carried out among individual investors or students of economic specialization. It can be suggested that this study might give a start for further investigation in the field of risk-taking behavior of corporate managers, as well as exploring corporate strategy dependence on the risk attitudes of corporate executives.

The present study was carried out from November 2011 to April 2012, using an online questionnaire. Altogether 125 questionnaires were sent and 58 answers were received. First, respondents received an introduction letter via Email, where the aim of research and type of questions were described shortly. The letter also contained a link to the online questionnaire. Questionnaires were prepared in English for Sweden, in Estonian for Estonia, and in Russian for Ukraine (Appendix 2). In order to ensure analogical perception of the questions, questionnaires were externally translated first from Russian into English and Estonian, and then translated back into Russian by third parties. Original and ‘derivative’ Russian questionnaires were compared and some small adjustments were made. All respondents had the option of completing the questionnaire anonymously if they did not want to reveal their name or name of the firm.

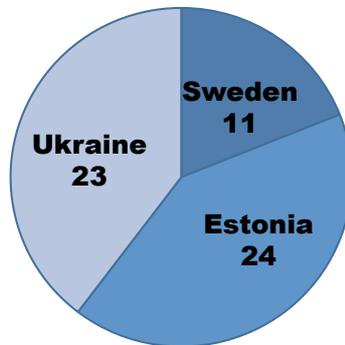
All respondents were selected through the author's business contacts, Tartu University MBA students, Estonian Business School MBA, MBA executive students, Chalmers School of Entrepreneurship students and supervisors, Chalmers Business Incubator, as well as private HR and Audit agencies in Estonia and Ukraine. On the one hand it ensured a high return rate (46%) and quality of responses (all questionnaires were accepted for analysis); however on the other hand, distribution and numbers of respondents were limited.

Questionnaire consisted of three sections. Respondents were asked to comment on their choices and on the questionnaire as a whole. Questionnaires were estimated to take around 30-40 minutes, but after receiving the pilot results, the estimated time was decreased to 20 minutes. It was found that respondents were not "counting right result", but using intuition and "feeling of what is right". However, questions were designed in a way that they did not have right or wrong answer; weighted outcomes of alternatives were equal.

First section of the questionnaire contained general questions in order to receive the socio-demographic profile of the respondent and his or her company, including: city, gender, age, education, current position at work, general work experience and experience within current position, engagement with the company, main tasks and fields of work, total amount of employees, and the company's turnover.

The study was distributed among 58 top-managers of companies in Sweden, Estonia and Ukraine (Figure 2.5). 59% were male and 41% female, with an average age of  $39 \pm 9$  years (Appendix 3). There were significantly more female respondents in Ukraine (70%), compared to Estonia and Sweden, where majority of respondents were male (79% and 73% respectively).

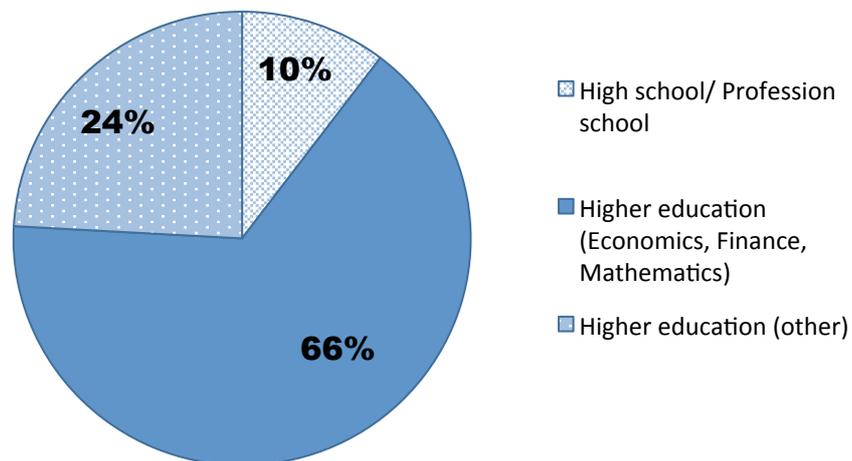
### Respondents



**Figure 2.5.** Total distribution of respondents among countries (absolute number)

Majority of the respondents had completed higher education (Figure 2.6) and 66% of the respondents had higher education in the economic or financial field. Minimum work experience in the financial field was half a year (start-up companies), and maximum experience was 40 years, with a mode of 10 years and average experience of  $12 \pm 7$  years (Appendix 3).

### Education



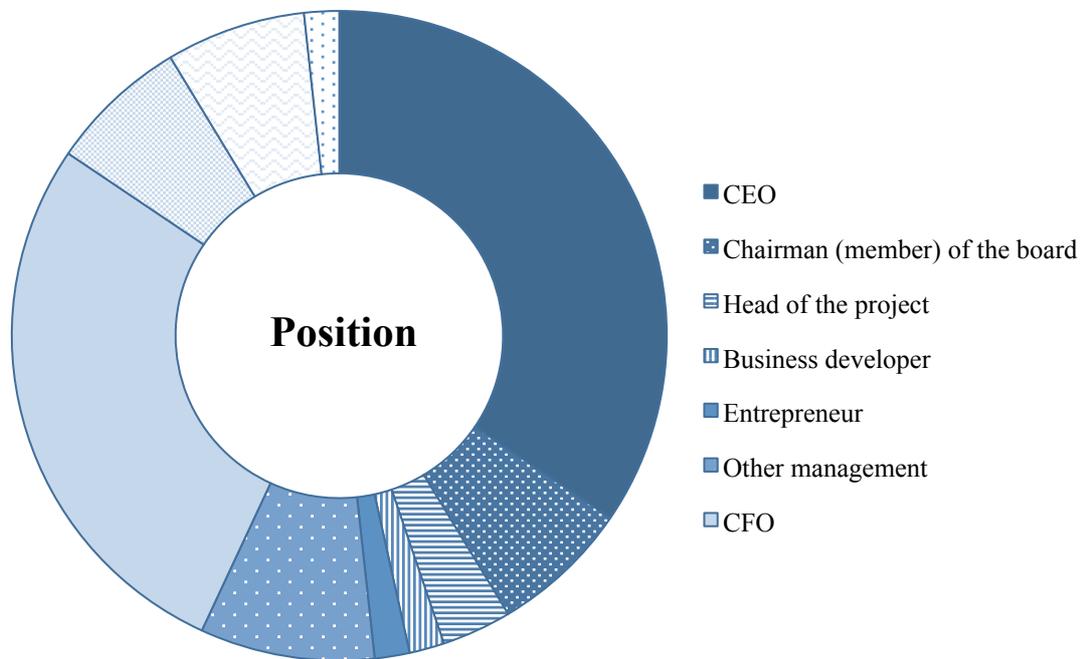
**Figure 2.6.** Profile of respondents – level of education

Work positions occupied by the respondents can be divided into two major groups (Figure 2.7):

1. General and strategic management: CEOs, chairmen and members of the board, head of the projects, business developers and other managers;
2. Financial managers: CFOs, chief accounts and controllers, deputies in economic and financial questions, etc.

However, in small firms, CEOs were more likely to also fulfill the role of a CFO.

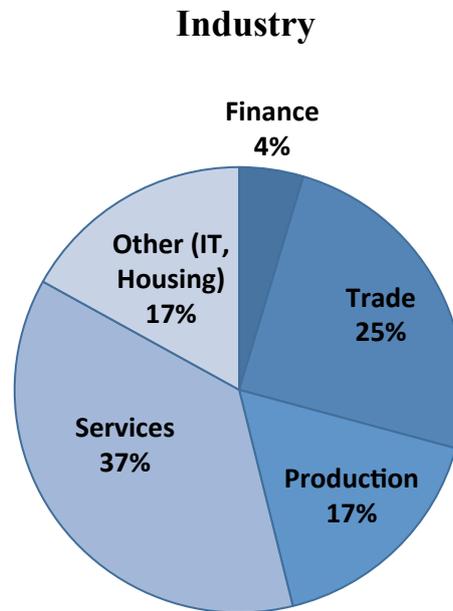
Nearly all respondents stated that among their responsibilities include: managerial accounting, controlling, cost accounting, financial planning, budgeting, defining of business strategy, taxation optimization, etc.



**Figure 2.7.** Profile of respondents – work positions

The respondents had worked in their positions for 6.7 years on average; however, minimum experience in a position was half a year, and the maximum was 20 years, with a mode of 10 years.

55% of respondents were employees that received regular salary, 17% of respondents owned shares of the companies they worked at and 28% were owners or co-owners of the companies they work at (Appendix 3).

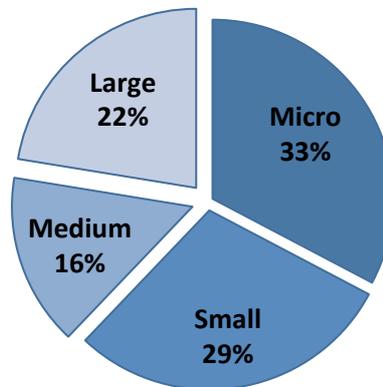


**Figure 2.8.** Profile of companies – Industry

In Ukraine, 78% of respondents were employees and 17% were employees who owned shares of the company. In Estonia, 46% of respondents were owners and co-owners of companies and 13% were employees who had shares of the company. Around 42% of Estonian respondents were employees who received salaries. In Sweden ratios were accordingly 36%, 27% and 36%.

Most of the firms where the respondents worked were engaged in services (37%) and in trade (25%), only 4% of companies represented financial industry. A lot of companies had not one, but several major fields of activity.

## Company size



**Figure 2.9.** Profile of companies – Company size

It was not surprising that firm sizes were distributed unequally among countries, with majority of firms in Estonia being of micro and small size, and majority companies in Ukraine being large. Division by the size of the companies was made according to the European Commission norms.

The second section was aimed to reveal some personal characteristics of the respondents and general differences in risk propensity in financial decisions. It was mostly dedicated to personal financial decisions. Questions described several situations where respondents had to make a choice between several opportunities, which involved different levels of risk. However risk levels were not given and respondents were expected to answer on the basis of experience and intuition. Several questions of this section aimed to compare attitude towards risk; for instance, respondents had to express their judgment on optimal capital structure of the firm in their industry. The respondents were also asked to estimate the probability of the financial crisis reoccurring in their countries; they could specify what actions they would undertake in order to reduce losses in case the financial crisis reoccurred.

Section 2. Question 1. *You have been invited to a charity evening, where an instant lottery is carried out. There are 1000 guests in total at the reception, and each of them has to buy at least 1 lottery ticket. Everyone, however, is free to buy as many tickets as*

they want, because there is no limit to ticket amount issued per person. All redeemed tickets with the owners' names will be placed into the lottery drum where 1 winning ticket will be randomly selected. Price of one ticket is 10 euro. Declared prize is 10 000 euros. How many tickets would you buy?

This question was designed in order to compare relative propensity towards risk-taking, gambling and adventurism. The situation contains high uncertainty (it is nearly impossible to calculate outcome, because total amount of tickets bought is not revealed), chances to win are low, however spending (losing) money on charity, should not be perceived as regrettable loss. It is suggested that people who would by minimum amount of one ticket would be more risk-averse and less optimistic than those who buy a significantly higher amount of tickets.

**Table 2.3.** Respondents' decision on the amount of lottery tickets that (s)he would buy on charity evening

	Total	Sweden	Estonia	Ukraine
<b>Min</b>	<b>1</b>	1	1	1
<b>Max</b>	<b>500 (50)*</b>	10	10	500
<b>Average</b>	<b>14 (5)*</b>	2.3	3.6	30
<b>St.Dev</b>	<b>67 (9)*</b>	3	3.6	106 (13)*
<b>Mode</b>	<b>1</b>	1	1	1

\* Result excluding extreme value of 500 tickets

Source: Compiled by author

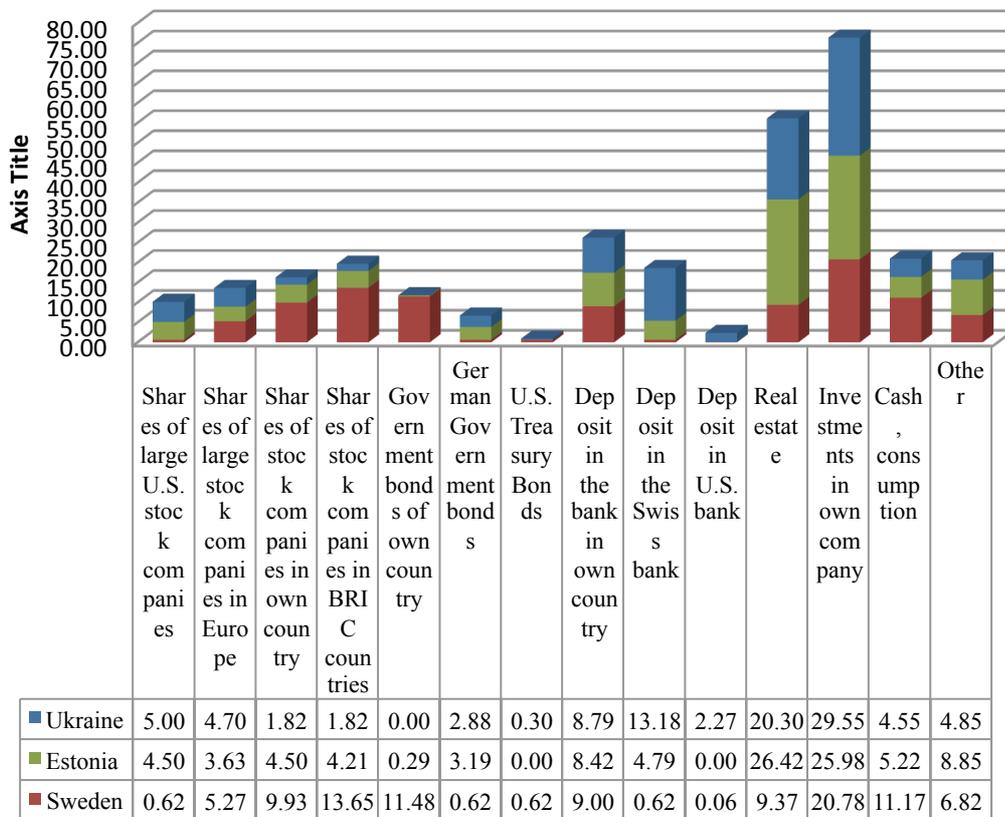
The findings suggest that Ukrainian managers are more inclined to face uncertainty and rely on chance. Not only was the maximum amount of 500 tickets “bought” by Ukrainian managers, but also the average package of tickets was significantly higher, than in Estonia and Sweden. However the most widespread answer in all three countries (mode) is one.

In the questionnaire respondents were asked to state whether they (or their family) have additional insurance apart from those that are compulsory in the country. In Estonia 50% and in Ukraine around 48% of respondents had extra insurance, in Sweden 73% of respondents had extra insurance.

Section 2. Question 2. You have received 1.5 million euro inheritance (after taxes) from a distant relative. How would you distribute the money among different investment opportunities?

In Question 2, the respondents were able to choose between 14 suggested investment opportunities and also between different sums of money: 0 €, 100 000 €, 250 000 €, 500 000 €, 1 000 000 €. Total amount of investments must not exceed 1.5 mln. €.

**Distribution of inheritance by country**



**Figure 2.10.** Respondents’ preferred distribution (in %) of aggregated inheritance between different investment opportunities, cross-country comparison (Compiled by author)

Choices within each country were aggregated in order to see the general country preferences towards offered investment alternatives (Table 2.4). The alternatives of investment in own company and in real estate were significantly more attractive for respondents in all countries (Figure 2.10). Ukrainian managers would invest 29,5% of

the aggregated inheritance into starting own company (or investing in existing one), Estonian managers have given 26% for this alternative, and Swedish managers 21%. 20% of total wealth in Ukraine, 26% in Estonia and 9% in Sweden would be invested in real estate. U.S. Treasury bonds and U.S. banks were the least attractive options for investments among the three countries.

**Table 2.4.** Ranking of respondents' priorities to investment alternatives (1 denotes the highest priority, 12 – the lowest priority)

<b>Investment alternatives</b>	<b>Sweden</b>	<b>Estonia</b>	<b>Ukraine</b>
Shares of large U.S. stock companies	10	7	5
Shares of large stock companies in Europe	9	9	7
Shares of stock companies in own country	5	7	11
Shares of stock companies in BRIC countries	<b>2</b>	8	11
Government bonds of own country	<b>3</b>	11	-
German Government bonds	10	10	9
U.S. Treasury Bonds	10	-	12
Deposit in the bank in own country	7	4	4
Deposit in the Swiss bank	10	6	<b>3</b>
Deposit in U.S. bank	10	-	10
Real estate	6	<b>1</b>	<b>2</b>
Investments in own company	<b>1</b>	<b>2</b>	<b>1</b>
Cash, consumption	4	5	8
Other	8	<b>3</b>	6

Source: Compiled by author

For Swedish managers the option of investing in BRIC (Brazil, Russia, India, China) was a second priority (14%) after investing in own company (Table 2.4). These countries are among the most dynamically developing and growing countries with huge consumption markets, human and natural resources they have also been achieving outstanding results in the development of technologies. BRIC countries are strategic partners for Sweden, as Swedish companies can grow and expand only outside Sweden and the EU, as internal markets are overloaded. Swedish executives are ready to face higher risks for higher dividends in return. However, the third priority for Swedish executives is the Swedish government bonds. The Swedish government is stable and strong, therefore investments in its bonds would be considered to contain low risks.

Investments in real estate and own company were the main priority for Estonian managers that significantly stand out among all others. Next alternative – bank deposit – in Estonia gained only 8% of general wealth. Approximately same amount would also be invested in the U.S. (4.5%), Estonian (4.5%), BRIC (4,2%), and European (3.6%) shares. Estonian managers seemed to rely on their own abilities and achievements, and preferred to invest in themselves, saving extra-money for short-term purposes.

Ukrainian managers prioritized investments in own company and alternatives that “save” money. Real estate has always been considered to be one of the most secure investments in Ukraine; that is why housing prices are extremely high in Ukraine and are comparable with highly developed European cities. It is also very hard to get and to then be able to pay back a real estate loan in Ukraine; that is why buying out real estate for the heritage money would be natural. Banks in Switzerland and in the country of residence took the third and fourth positions on the priority list (Table 2.4) of Ukrainian managers. Although the number of respondents that chose a Swiss bank and a Ukrainian bank was the same (12), Swiss banks gained significantly higher sums of money, thereby around 13% of common wealth would be invested in a Swiss bank, and 9% in a Ukrainian one. 30% of respondents, who chose bank deposit as a good investment alternative, distributed the money between both Swiss and Ukrainian banks. Managers in Ukraine do not want to invest own money in opportunities that contain risk; they prefer security and to “save for black day”, rather than to “put money to work”.

Section 2. Question 3. *In Your opinion, what is the optimal capital structure (Equity/Debt) in Your industry?*

Engaging in debt capital gives several advantages for the company: tax shield, risk diffusion, aggregating of significant amount of capital. However, using debt capital would not be beneficial if capital engagement is very difficult and expensive. There was a wide distribution in the answers of the respondents (Table 2.5); that is why it is difficult to make any conclusions. In order to get a more complete picture, individual answers should be compared with the company’s profile. On average, Swedish managers would prefer equal amounts of Equity and Debt in capital structure. It can be noticed that the mode of answers of Swedish managers was much lower than among Estonian and Ukrainian managers.

**Table 2.5.** Respondents' judgment on optimal capital structure of the firm and on maximum period (years) until new venture starts accumulating profit

<b>Equity (%)</b>	<b>Sweden</b>	<b>Estonia</b>	<b>Ukraine</b>
Min	20	10	10
Max	100	100	100
Average	50	52	63
St.Dev	27	28	24
Mode	20	70	50
<b>Years till break-even</b>	<b>Sweden</b>	<b>Estonia</b>	<b>Ukraine</b>
Min	1	0.5	0.5
Max	5	7	5
Average	3	2	1.66
St.Dev	1.2	1.4	1.3
Mode	3	2	1

Source: Compiled by author

Estonian respondents preferred 52% of equity (48% of debt) on average, with a mode of 70%. Ukrainian managers on average showed preference towards larger amount of Equity (approximately 63%), but the mode among answers is 50%. This result might be caused by the fact that in Ukraine it is more difficult and expensive to receive debt financing; that is why financial executives tend to engage investment capital rather than debt.

Section 2. Question 4. *In Your opinion, what is the maximum period, during which a new promising business could declare losses, before starting to gain profit?*

The results show that Swedish executives are more patient than Estonian counterparts; they would accept approximately three years of non-profitable operating (Table 2.5). Among Ukrainian and Estonian managers the mode is 1 and 2 years. Ukrainian managers seem to be more focused on quick success than Swedish and Estonian managers.

The current study set out to find out whether financial executives believe that financial crisis of 2008 could reoccur in 2012. A comparison of the results between countries would give the opportunity to understand whether managers are optimistic or pessimistic about the future. The results would also show general attitude towards economic situation in the country (Table 2.6).

**Table 2.6.** Respondents' perception of possible financial crisis

<b>6. Do You believe that second wave of financial-economic crisis will come in Your country (or has already reached it)?</b>			<b>7. In Your opinion, what is the probability of recurrence of economic recession and financial crisis during next year (2012)?</b>			<b>8. Do you undertake now any actions in the company to reduce losses (damage, risks) in case of recurrence of financial crisis?</b>		
<i>(% of respondents, who answered YES or NO)</i>			<i>(Judgment (in average %) of respondents, who answered YES or NO in question 6)</i>			<i>(% of respondents who answered YES or NO)</i>		
	<b>YES</b>	<b>NO</b>		<b>YES</b>	<b>NO</b>		<b>YES</b>	<b>NO</b>
Ukraine	78	22	Ukraine	75	10	Ukraine	70	30
Estonia	75	25	Estonia	56	25	Estonia	33	67
Sweden	64	36	Sweden	50	50	Sweden	27	73
<b>Total</b>	<b>74</b>	<b>26</b>	<b>Total</b>	<b>66</b>	<b>19</b>	<b>Total</b>	<b>47</b>	<b>53</b>

Source: Compiled by author

The results show that a majority of Ukrainian (78%) and Estonian (75%) managers believe that the financial-economic crisis would reoccur during 2012. Ukrainian managers estimate on average 75% probability that the crisis will occur during this year. Several respondents stated that Ukraine and Estonia had not fully recovered from the previous crisis, and that economic decline in 2012 would be a result of internal problems, rather than general world trends.

The respondents in Ukraine confirmed that the economic conditions in Ukraine are very unstable and include various risks. 70% of respondents had undertaken various actions in order to reduce possible losses and risk in case of recurrence of the financial crisis. Although 75% of Estonian respondents believed that the crisis will come to Estonia, only 33% had taken actions to reduce possible risks and losses in the company. The executives in Estonia estimated lower probability of recurrence of the crisis to 56% on average. Those managers who answered 'NO' to the question about financial crisis, estimated probability of a crisis as around 10% on average in Ukraine and as 25% on average in Estonia (the results for Sweden are not discussed as only one respondent gave a numerical estimate of probability). Several Swedish executives suggested that a crisis might occur; but not in Sweden, as it has a very stable and strong economy. Thus managers in Sweden perceive the national economy to contain low risks.

The results from the first two sections suggest that Ukrainian and Estonian managers would not risk their own money and would prefer certain investment opportunities, such as real estate. This shows that they are more short-term oriented and less patient than Swedish managers. The executives in all three countries considered investment in own business to be the best option of money allocation, thus it can be assumed that all respondents have high level of self-confidence. In general, Ukrainian managers were the least optimistic about the future; on the contrary, Swedish managers were the most optimistic.

The two dimensions of the Circular Model of Risk Propensity – Context and Personality have also been discussed. The current study focuses not on the personality of each individual, but on the general differences of the managers' profile between the three countries. These are two dimensions that could not be influenced by the researcher, only results and make conclusions could be compared. The third dimension of the Circular Model of Risk Propensity – framing – is directly influenced by the researcher, thereby it is possible to test hypotheses that describe the different framing effects. That is why Framing is discussed separately in the next section.

### **2.3. Testing of hypotheses and further discussion**

According to Kahneman and Tversky (1979), and Sullivan (1997), when a problem is positively framed (gains), decision-maker would avoid risks and take the variant “for sure”. On the contrary, when a problem is framed as “losses”, decision-maker would choose the risky alternative.

It can be suggested that the general economic conditions and trends might affect the decision of economic agents and result in propensity to take risks. If a company was doing well in the past and the economic conditions in the country are favorable, managers may believe that best outcome would take place and took a risk in order to “win” more. In addition, in such conditions the worst result would not be perceived as dramatic. In contrast, in the condition of general economic decline, managers would exhibit risk-averse behavior, in order to minimize risks, and would prefer “sure loss”

(decline in value) over a risky alternative. These assumptions would be controlled on two different levels:

- 1) Testing of 6 pairs of hypotheses, by introducing description of positive or negative economic conditions into problem framing;
- 2) Comparison of questionnaire results between each country and comparison to an average result; whereby Ukraine represents general unfavorable economic conditions and Estonia and Sweden represent conditions of stable economic growth.

In order to test framing effect (narrow framing), the third part of the questionnaire had two alternative variants. Half of the respondents received Questionnaire A and another half Questionnaire B, where same problems were framed either as losses or gains. Problems in the third part were developed from the Kahneman and Tversky (1979), Moon (2001), Conlon and Garland (1993), and Sullivan (1997) experiments, but with several extensions, such as introducing additional problem framing – general economic conditions (high growth, neutral or crisis), past performance of the company (previous success or losses), and information about competitors.

It was also decided not to use notions such as absolute losses, gains, profit, because in isolation from other financial data they do not show the right picture. Thus, in the current study business value is used as a reference point in estimating positive (increase in business value) and negative (decrease in business value) outcomes. It was suggested that the growth of business value should be the goal of major investment decisions of corporate executives.

Sullivan's (1997) problem from the experiment 1 has been taken as a reference point for the comparison with extended types of problems. Formulation of the problem was slightly changed, so that instead of gains and losses, the value of the firm was taken as a measurement of outcomes. Questionnaire B contained the problem, which was positively framed.

*Section 3. Problem 1.1.P. One expects that because of difficult economic conditions value of your company might decrease by 600 000 euro. You have two different ways out of the situation. If you choose option A, the company will definitely save 200 000 euro of its value. For the option B you estimate that there is 1/3 probability to save*

entire 600 000 euro of value, but there is also 2/3 probability of saving nothing out of expected reduction. Which option would you chose?

Questionnaire A contained negatively framed analogue of the problem.

Section 3. Problem 1.1.Y. *One expects that because of difficult economic conditions value of your company might decrease by 600 000 euro. You have two different ways out of the situation. If you choose option A, the company will definitely lose 400 000 euro of its value. For the option B you estimate that there is 1/3 probability not to lose in value, but there is also 2/3 probability to lose entire 600 000 euro of the business value. Which option would you chose?*

Expected outcome in each and every case is equal – 400 000 € reduction of companies value (Table 2.6.1).

**Table 2.6.1** Problem statement 1.1.

<b>Problem 1.1.P. (positive framing)</b>			
<b>A</b>		<b>B</b>	
<b>Value saved</b>	<b>Probability</b>	<b>Value saved</b>	<b>Probability</b>
200 000 €	1 (100%)	600 000 €	1/3
		0	2/3
$E(v) = (-600000) + 200000 = (-400000)$		$E(v) = (-600000) + (600000 \times 1/3 + 0 \times 2/3) = (-400000)$	
<b>Problem 1.1.Y. (negative framing)</b>			
<b>A</b>		<b>B</b>	
<b>Value lost</b>	<b>Probability</b>	<b>Value lost</b>	<b>Probability</b>
400 000 €	1 (100%)	0	1/3
		600 000 €	2/3
$E(v) = (-400000)$		$E(v) = (-600000 \times 2/3) = (-400000)$	

Source: Compiled by author

Consistently with the experiments of Sullivan (1997), the results show that when a situation is positively framed, majority of managers would choose the alternative “for sure” (62%). In the negatively framed situation results would be mirrored - 67% of managers chose risky alternative (Table 2.6.2).

**Table 2.6.2.** Results of the experiment 1.1.

(%)	Problem 1.1. P.		Problem 1.1.Y.	
	A	B	A	B
<b>Ukraine</b>	64	36	25	75
<b>Estonia</b>	55	45	46	54
<i>Sweden</i>	75	25	29	71
<b>Total</b>	62	38	33	67

Source: Compiled by author

First of all, these results show that managers perceive a decrease in business value as a clear “loss”. The results also show relative differences in risk propensity of Estonian and Ukrainian managers (because of a very small number of respondents in Sweden it is impossible to make well-grounded conclusions about risk propensity of Swedish managers; however, their answers are included in calculating of total result; and several assumptions can be made on the basis of the results received). Ukrainian managers are slightly more risk-averse than Estonian counterparts; on average 64% of Ukrainian managers chose the variant of saving 200 000 € of the business value, rather than to taking the risk (36%) to experience 600 000 € decline in the business value. Ratio for the Estonian managers is 55% to 45%. More significant differences are noticeable in the negatively framed situation, where managers had to choose between a certain value loss and a risky alternative. Ukrainian managers showed mirroring effect, with 75% choosing variant B (risky alternative) and 25% choosing variant A. Estonian managers were not affected by the change in formulation of the problem significantly; only 9% showed preference for the risky alternative, resulting in ratio of 46% to 54% (Table 2.6.2).

The next experiment included additional information in the statement of the problem – conditions of high economic growth and previous increase in business value. Problem 1.2.1 P. appeared in Questionnaire B and it contained positive framing – opportunity of increasing of business value. The experiment aimed to test the following pair of hypotheses:

- $H_0^1$ : *In the conditions of general economic growth and successful outcome history, managers would accept higher risks when faced with opportunity of additional increase of business value.*

- $H_1^1$ : *In the conditions of general economic growth and successful outcome history, managers would not take risks when faced with opportunity of additional increase of business value.*

Section 3. Problem 1.2.1 P *Due to general economic growth and well-chosen strategy, the value of your company in the current year has increased by 600 000 euros. Marketing department has developed two short-term projects for company development. You have analyzed these projects and concluded that project A guarantees 200 000 euro growth of the company value; project B with 1/3 probability will give an opportunity to raise business value for 600 000 euros, or (with 2/3 probability) won't affect value of the company. The company has free resources for the implementation of one project only. Which project would you suggest to implement?*

Questionnaire A contained the opposite Problem 1.2.1.Y that was negatively framed – probability of a decrease in business value. The experiment aimed to test the following pair of hypotheses:

- $H_0^2$ : *In the conditions of general economic growth and successful outcome history, managers would accept risks when faced with danger of decline in business value.*
- $H_1^2$ : *In the conditions of general economic growth and successful outcome history, managers would not take risks when faced with danger of decline in business value.*

Section 3. Problem 1.2.1 Y: *Due to general economic growth in the country, your company has already added 1M euro to its value, but 2 venture investments made in the past are not paying off. However, you still have an opportunity to abandon one of the projects. You assume that if you would continue with project A – company will definitely lose 200 000 euro of its value. On the other hand, project B with 2/3 probability won't affect business value at all, but with 1/3 probability it will lead to decreasing of company value for 600 000 euro. Which project would you prefer to continue?*

Taking into account previous performance of the company, expected value for all four alternatives is equal – 800 000 € growth of business value (Table 2.7.1).

**Table 2.7.1.** Problem statement 1.2.1.

<b>Problem 1.2.1.P. (positive framing)</b>			
<b>A</b>		<b>B</b>	
<b>Growth of value</b>	<b>Probability</b>	<b>Growth of value</b>	<b>Probability</b>
200 000 €	1 (100%)	600 000 € 0	1/3 2/3
$E(v) = 600000 + 200000 = 800000$		$E(v) = 600000 + (600000 \times 1/3 + 0 \times 2/3) = 800000$	
<b>Problem 1.2.1.Y. (negative framing)</b>			
<b>A</b>		<b>B</b>	
<b>Decline in value</b>	<b>Probability</b>	<b>Decline in value</b>	<b>Probability</b>
200 000 €	1 (100%)	0 600 000 €	2/2 1/3
$E(v) = 1M - 200000 = 800000$		$E(v) = 1M - (600000 \times 1/3 + 0 \times 2/3) = 800000$	

Source: Compiled by author

Introduction of the description of economic growth and successful previous outcome history into framing led to even more risk-averse behavior of the respondents. The results of the experiments show that 69% of managers chose certain variant (200 000 € business value growth) in the positively framed situation (Table 2.7.2). The most significant shift of preferences is noticeable among Ukrainian managers – from the ratio of 64/36 in neutral conditions to 82/20 ratio in the conditions of success. Swedish managers differ from both Estonian and Ukrainian counterparts in their preference; 50% of the respondents chose the risky alternative (B) in this problem. It would be interesting to obtain results from a larger number of Swedish managers in order to justify the results.

**Table 2.7.2.** Results of experiment 1.2.1

#1 #2 (%)	<b>Problem 1.2.1.P</b>		<b>Problem 1.2.1. Y</b>	
	<b>A</b>	<b>B</b>	<b>A</b>	<b>B</b>
<b>Ukraine</b>	82	20	25	75
<b>Estonia</b>	64	36	46	54
<b>Sweden</b>	50	50	43	57
<b>Total</b>	69	31	36	63

Source: Compiled by author

Therefore,  $H_1^1$  was accepted: *In the conditions of general economic growth and successful outcome history, managers would not take risks when faced with opportunity of additional increase of business value.*

In the situation of decline of business value, 63% of managers chose the risky alternative. The answers of the Estonian and the Ukrainian managers were consistent with the previous experiment, so that the additional information about economic growth and previous growth in business value did not affect their decisions.

$H_0^2$  was accepted: *In the conditions of general economic growth and successful outcome history, managers would accept risks when faced with danger of decline in business value.*

The next experiment studied the influence of negative past performance and general weak economic conditions on the decisions of respondents.

Section 3. Problem 1.2.2.P: *It is financial and economic crisis in the country, your company has already lost 600 000 euro of its value. But in spite of this two venture investments made in the past are paying off. Unfortunately, you have resources for continuation of one project only. You have analyzed the projects and concluded that project A guarantees 200 000 euro growth of the company value; project B with 1/3 probability will give an opportunity to return the value of the company to initial level (raise business value for 600 000 euro), but with 2/3 probability it won't affect current value of the company. Which project would you prefer to continue?*

Problem 1.2.2.P (Questionnaire B) describes a situation when in general bad economic conditions a company has already lost part of its value, however several investment projects are profitable and can provide the opportunity to increase business value. Experiment aimed to test the following pair of hypotheses:

- $H_0^3$ : *In the conditions of general economic crisis and previous decline of business value, managers would not accept risk when faced with opportunity of increasing of business value, but will choose certain alternative.*

- $H_1^3$ : *In the conditions of general economic crisis and previous decline of business value, managers would accept risk when faced with opportunity of increasing of business value.*

Problem 1.2.2.Y in Questionnaire A described the same general economic situation, but it was negatively framed, so that the managers were facing a situation where their company had already lost part of its value and there is a danger of even stronger decline.

Section 3. Problem 1.2.2.Y: *It is financial and economic crisis in the country, your company has already lost 600 000 euro of its value. Two venture investments made in the past are not paying off as well. However, you still have an opportunity to abandon one of the projects. You assume that if you would continue with project A – company will definitely lose additional 200 000 euro of its value. On the other hand, project B with 2/3 probability will be break-even and won't affect business value at all, but with 1/3 probability it will lead to decreasing of company value for additional 600 000 euro. Which project would you prefer to continue?*

The experiment aimed to test the following pair of hypotheses:

- $H_0^4$ : *In the conditions of general economic crisis and previous decline of business value, managers would not accept risk when faced with danger of even greater decline of business value, but will choose certain alternative.*
- $H_1^4$ : *In the conditions of general economic crisis and previous decline of business value, managers would accept risk when faced with danger of even greater decline of business value.*

In the problem 1.2.2.P the expected loss in business value for both variants A and B was 400 000 €. In the problem 1.2.2.Y variant A and B had equal weighted outcome of 800 000 € decline in business value (Table 2.8.1).

**Table 2.8.1.** Problem statement 1.2.2.

Problem 1.2.2. P. (positive framing)			
A		B	
Growth of value	Probability	Growth of value	Probability
200 000 €	1 (100%)	600 000 €	1/3
		0	2/3
$E(v) = (-600000) + 200000 = (-400000)$		$E(v) = (-600000) + (600000 \times 1/3 + 0 \times 2/3) = (-400000)$	
Problem 1.2.2. Y. (negative framing)			
A		B	
Decline in value	Probability	Decline in value	Probability
200 000 €	1 (100%)	0	2/2
		600 000 €	1/3
$E(v) = (-600000) - 200000 = (-800000)$		$E(v) = (-600000) - (600000 \times 1/3 + 0 \times 2/3) = (-800000)$	

Source: Compiled by author

The results of the experiment 1.2.2 were very similar to the results of the previous experiment 1.2.1. 73% of all respondents chose the certain alternative when the problem was framed as growth of business value, and 69% chose the risky alternative when the problem was framed as a decline in business value.

**Table 2.8.2.** Results of experiment 1.2.2.

#3 #4 (%)	Problem 1.2.2.P (growth)		Problem 1.2.2. Y (losses)	
	A	B	A	B
<b>Ukraine</b>	73	27	9	91
<b>Estonia</b>	82	18	54	46
<b>Sweden</b>	50	50	29	71
<b>Total</b>	73	27	31	69

Source: Compiled by author

The results of the experiment 1.2.2 suggest that  $H_0^3$  and  $H_1^4$  should be accepted. However, on the country level, the results show a different picture. For Ukrainian managers information about poor economic conditions and poor previous performance in the past resulted in even higher propensity to take risk, but a majority of Estonian managers

chose the risk-averse action – additional decline in business value for sure. These results indicate the differences in risk-taking preferences of Ukrainian and Estonian managers in the conditions of an economic crisis, when a problem is framed as additional decline of business value. This difference might be explained through the profile of the Estonian and the Ukrainian respondents – Estonian managers came from micro and small firms, therefore losing additional 600 000 € of business value would mean bankruptcy of their firm. On the contrary, a majority of the Ukrainian respondents worked in large firms (annual turnover around 43 mln €) and that explains why they were ready to take that risk.

The current study also investigates whether general economic conditions and information about competitors would influence the degree of “sunk costs” effect. For that purpose we use an extended and modified version of the Conlon and Garland’s (1993) experiments. Because of the limitations of current research the present study was not able to test both ‘project completion’ and ‘sunk cost’ effects, hence the study investigated the resource allocation decisions with 90% of project completion and 90% of the resource allocation rate. It is suggested that in the conditions of a financial crisis and a high level of competition, managers would terminate risky investment projects, in order to spend “free” money on acute financial needs. Problem 2.1.1.N (Questionnaire A) and Problem 2.1.2.K were aimed to test the following pair of hypotheses:

- $H_0^5$ : *In the conditions of general economic crisis and high competition, managers would be more eager to terminate investment project than in neutral conditions.*
- $H_1^5$ : *In the conditions of general economic crisis and high competition, managers would not be more eager to terminate investment project than in neutral conditions.*

Problem 2.1.1.N didn’t include information about economic conditions, only information about company’s competitor and information about status of R&D project.

Section 3. Problem 2.1.1.N: *Several years ago, together with the owners of the company you decided to invest 3M euros in R and D project. The project was aimed to develop an innovative product, due to which your firm would be the first to enter a new market that would give you a significant competitive advantage. When you have already invested 2.7M euro and the project was completed by 90%, you received information that your*

*company's competitor has already launched practically the same innovative product, but of much higher quality at a lower price. Management of the company is facing the choice: to continue R&D project and invest necessary 300 000 euros, or terminate the project. Which option would you advise as the CFO to the owners of the company?*

As a result, 68% of respondents decided to continue with the project. The difference between A and B alternatives for Ukrainian respondents was 10 % (55/45); that is much less than the average of 36% (68/32), thus Ukrainian managers were relatively more eager to terminate the project.

Problem 2.1.2.K was extended with the information about a crisis in the banking system of the country, resulting in financial problems in the company *ceteris paribus*.

Section 3. Problem 2.1.2.K: *Several years ago, together with the owners of the company you decided to invest 3M euro in R and D project. The project was aimed to develop an innovative product, due to which your firm would be the first to enter a new market that would give you a significant competitive advantage. You have already invested 2.7M euro in the project. When it was completed by 90%, your company started experiencing serious financial problems, because of the crisis in the banking industry. Furthermore you received information that your company's competitor has already launched practically the same innovative product, but of much higher quality and better price. Management of the company is facing the choice: to continue R&D project and invest necessary 300 000 euros, or terminate the project and use the funds for acute financial needs of the company. Which option would you advise as the CFO to the owners of the company?*

**Table. 2.9** Results of experiment 2.1.

#5 (%)	Problem 2.1.1.N		Problem 2.1.2.K	
	A	B	A	B
<b>Ukraine</b>	55	45	82	18
<b>Estonia</b>	69	31	45	55
<b>Sweden</b>	86	14	25	75
<b>Total</b>	68	32	58	42

Source: Compiled by author

The results from the three countries in total show a slight shift towards the alternative of terminating the project; however, there are significant differences between the countries. For Ukrainian managers information about financial problems in the country and in the company resulted in stronger preference towards continuing the project. On the contrary, significant majority of Swedish managers chose termination of the project and spent money on acute financial needs. Estonian managers showed slight preference towards termination of the project as well (55%). Therefore, a general conclusion cannot be made about the effect that poor economic conditions have over resource allocation decisions.

Experiment 2.2 included problems similar to the previous ones, but it compared a situation of economic growth and good performance of the company with economy decline and very poor performance of the company. Managers had to state the minimum probability of success of the project that they would demand in order to make the decision to continue with that project. This experiment was aimed to compare risk propensity of respondents and to find out what risk levels would make them abandon project that is 90% complete. Problem 2.2.K and Problem 2.2.P were aimed to test the following hypotheses:

- $H_0^6$  : *Managers would demand higher probability of success of the project in order to allocate additional funds, when company is performing badly than when company's performance is good.*
- $H_1^6$  : *Managers would demand higher probability of success of the project in order to allocate additional funds, when company is performing better than when company's performance is bad.*

Section 3. Problem 2.2.K: *Industry that your company works in is in very poor conditions. Your company is losing market share. Because of this, financial performance is decreasing rapidly, and you are foreseeing the continuation of this trend for at least several years. Last year aiming for consolidation of market positions, your company invested 2.7M euro in the development of entirely new product. The project has to be completed within six months after the inflow of additional 300 000 euro. However, you have recently received information that your competitor has already launched a similar product that has better quality at a lower price than yours. You*

*asked marketing department to conduct market research and find out whether consumers will be willing to buy your product in new conditions. For yourself, you have decided that ....*

- 1) You will make additional investments (300 000 euro) and continue the project if the probability that your product will be in demand is...*
- 2) You will terminate the project and won't invest additional funds if the probability that your product won't be in demand is ...*

The respondents could choose between 10% 25%, 50%, 75%, and 90% probabilities. They were informed that answers 1 and 2 should not be connected to each other. Problem 2.2.K was framed as a situation of very poor previous performance and it appeared in Questionnaire B. Questionnaire A contained the same problem, but with conditions of very successful past performance of the company.

Section 3. Problem 2.2.P: *Your company has gained significant market share and customer loyalty. Due to this, financial performance of the company is steadily growing, and you anticipate the continuation of this trend at least for several years. In order to consolidate market positions, last year your company invested 2.7 million euros in the development of entirely new product. The project was to be completed within six months after the inflow of additional 300 000 euro. However, you have recently received information that your competitor has already launched a similar product that has better quality at a lower price. You asked marketing department to conduct market research and find out whether consumers will be willing to buy your product in new conditions. For yourself, you have decided that ....*

- 1) You will make additional investments (300 000 euro) and continue the project if the probability that your product will be in demand is...*
- 2) You will terminate the project and won't invest additional funds if the probability that your product won't be in demand is ...*

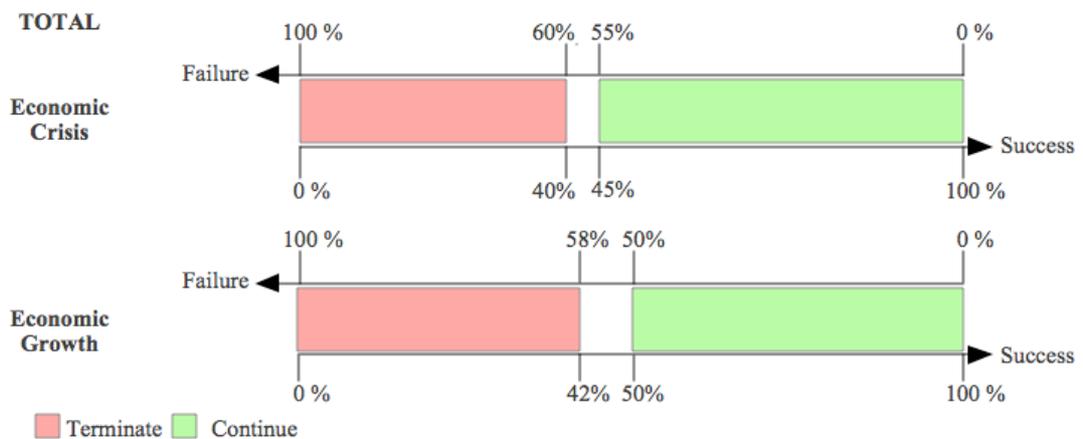
**Table 2.10.** Results of experiment 2.2.

#6	Problem 2.2.K		Problem 2.2. P	
(%)	Invest, if probability of success is...	Terminate, if probability of failure is...	Invest, if probability of success is...	Terminate, if probability of failure is...
<b>Ukraine</b>	41	75	52	64
<b>Estonia</b>	54	48	51	58
<b>Sweden</b>	28	47	46	52
<b>Total</b>	45	60	50	58

Source: Compiled by author

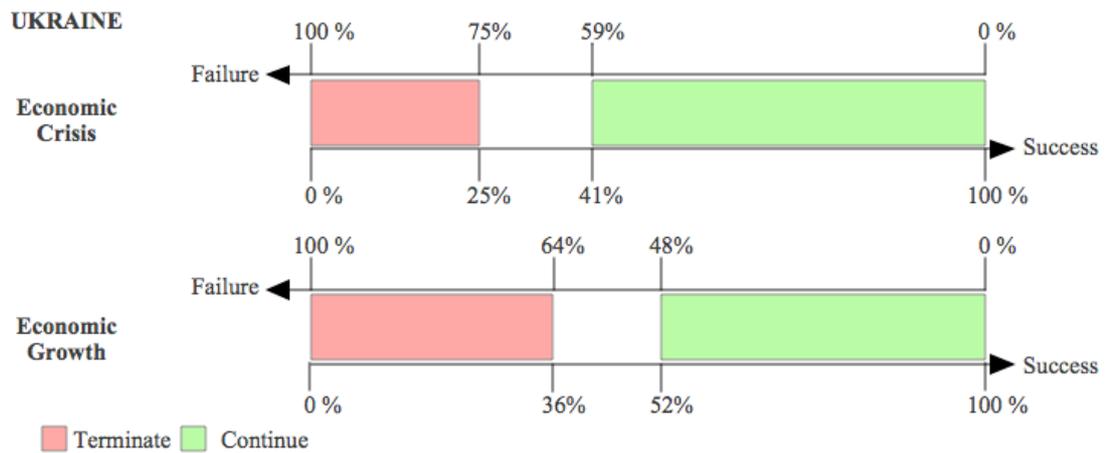
In this section analysis were made according to 54 answers, as 4 answers were not received. The results suggest that financial executives would continue with the project and invest remaining sum of money if the probability of success was 45% in the situation of economic decline and 50% in the situation of economic growth (Table 2.10).

Accumulated results from the three countries indicate that  $H_1^6$  should be accepted. However, the result is not obvious and indicates only a slight difference in the preferences of the managers (Figure 2.11).



**Figure 2.11.** Respondents' resource allocation decision within different probabilities of project success and failure

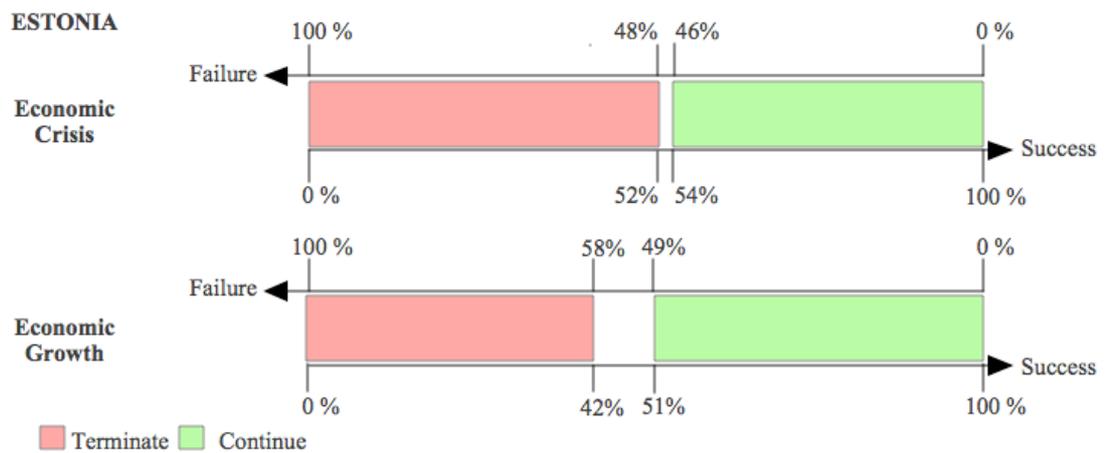
A cross-country comparison would show a clearer picture. The results in Ukraine (Figure 2.12) show that hypothesis  $H_1^6$  should be accepted: *Managers would demand higher probability of success of the project in order to allocate additional funds, when company is performing good compared with when company's performance is bad.*



**Figure 2.12.** Respondents' resource allocation decision within different probabilities of project success and failure (Ukraine)

Ukrainian executives demanded 41% probability of success of the project in order to continue with the project in the condition of economic decline. In the conditions of the company's growth Ukrainian managers would continue with the project if probability of success was 52%. It is also noticeable that in the conditions when the company is performing poorly, the probability of failure should be very high (75%) in order to take the decision to terminating the project.

Results in Estonia differ significantly from Ukraine. In cases of both growth and decline Estonian executives demanded approximately 50% probability of success of the project (Figure 2.13). However, in the conditions of economic decline and poor performance of the company managers terminated the project that has 48% probability of failure, but in conditions of economic growth and successful performance, they terminated the project that had 58% probability of failure.



**Figure 2.13.** Respondents' resource allocation decision within different probabilities of project success and failure (Estonia)

The results of the current study were consistent with previous research and behavioral finance theory, but they revealed new results on the country level. The results suggest that Ukrainian managers were relatively more risk-averse than the Estonian and Swedish counterparts in the conditions of economic growth and successful performance of the company. At the same time Ukrainian managers showed much higher predisposition towards risk-taking when facing situation of economic crisis and decline of companies value.

In the study specific features of Swedish managers could not be revealed due to a very low number of respondents (11), however some differences between Estonian and Ukrainian managers are still noticeable.

The study results have several restrictions and caveats. Due to limited resources, only a small number of respondents took part in the study, which does not allow to apply many statistical tests that would strengthen the quantitative element.. The study did not take into account psychological characteristics of the respondents, as it was focused not on assessing risk propensity of individuals, but on comparing relative differences in propensity to take risk in the three countries.

The current study discusses only a general profile of the respondents, thereby an interesting opportunity for further research lies in investigating the extent to which cultural differences determine risk propensity. The results obtained in this study might

be extended by introducing one additional dimension – the strength of decision-maker’s preference towards chosen alternatives. Given the framework and the questionnaire that were used in this study, one could estimate the strength of influence of such factors as culture, framing of the problem, and personal characteristics, on risk propensity. One of the areas for future study would be comparing risk propensity of financial executives with real performance of the company.

## SUMMARY

Behavioral finance science implies that economic agents do not behave according to the rational rules of economic theory, but according to their subjective, often irrational beliefs. In the economic settings decision-makers usually face situations where they have to make predictions and estimations of the events that might occur in the future. As this type of decision-making contains a high level of uncertainty, one of the central concepts of behavioral finance is the concept of risk-taking behavior. The current study investigated risk-taking behavior and risk propensity of financial executives, assuming that one can find differences in risk propensity of managers in different countries. For that purpose the first section discussed the theoretical concept, where risk propensity holds central role in the decision-making process. This concept suggests that the factors that determine risk-taking behavior should be examined by looking at close relation and interconnection.

Building on the theoretical concepts and in accordance with the study objectives, this paper introduced a framework that outlines main determinants of risk propensity called The Circular Model of Risk Propensity. The model suggests that there are three main dimensions that should be taken into account when assessing risk propensity of economic agents: context, framing and personality.

1) **Context** expresses wide framing of the problem. Context includes four different levels: country where research is taking place; problem scope; decision domain; and the decision- maker.

This study investigated three different countries: Sweden, Estonia, and Ukraine; from different perspectives: general economic conditions, business environment, and organizational culture.

Cross-country comparison showed that the Ukrainian economy is associated with high risks, because of the unstable political, social and economic environment. Ukraine represents a country with transitional economy, where economic agents are used to operate in the conditions of high uncertainty. Estonian economy contains much less risks than the Ukrainian; however due to its openness it is highly dependent on external trends, thus economic agents are careful in accepting excessive risks. Swedish economy is the most developed and risk-resistant, because of strong government positions, high competitiveness of Swedish firms and significant financial resources. Swedish economy contains low risks, however majority of companies work for external markets and are dependent on general world trends.

Swedish organizations are more liberal than Estonian and Ukrainian, with moderate control system and flat organizational structure, where decisions are taken within groups and responsibility is equally shared. Estonian managers are more task-oriented and focused on personal success, they act according to the rules and in that way reduce uncertainty. Ukrainian organizations are the most hierarchic, where top-managers have the decision power and responsibility in various fields.

Risks might occur in different areas of life, and propensity to take or avoid risk would also depend on the problem itself. The current study focuses only on the financial risks, that is why all questions in the questionnaire represent financial problems. Both personal and business domain decisions were included in order to compose a more complete profile of the respondents.

2) **Framing** refers to the description of the problem that the decision-maker is faced with; it could be influenced and manipulated by the researcher. First Kahneman and Tversky (1979), and then a lot of other authors, have shown that framing problem involving gains would result in risk-averse behavior of the decision-maker. In this study it was decided to use the growth (decline) of business value when framing problem in a positive (negative) way.

In this study six pairs of hypotheses involving different framing alternatives have been tested. The results have shown that framing affects the decisions made by managers in three countries with different strength.

In accordance with the research of Shapira (1997), MacGrimmon and Wehrung (1986), Bromiley (2001) it was decided to test how general economic situation and previous outcome history (performance) of the company would affect managerial decisions. The results have shown that when problem represents a situation of economic growth, has a good outcome history, and is positively framed, managers would be predisposed towards risk-averse choices to a greater extent than in a situation of neutral economic conditions. Therefore,  $H_1^1$  was accepted: *In the conditions of general economic growth and successful outcome history, managers would not take risks when faced with opportunity of additional increase of business value.*

However, among Swedish managers the results were different and they supported the suggestion that in good and stable economic conditions managers would be more willing to take risks. This finding has to be tested in further research as the number of Swedish respondents in the present study was not very high, which prevents making well-supported conclusions.

In the conditions of ‘negative framing’ additional information about good economic conditions has not affected managerial decisions, thus results were consistent with general tendency to take risks in the situation of losses. That is why hypothesis  $H_0^2$  was accepted: *In the conditions of general economic growth and successful outcome history, managers would accept risks when faced with danger of decline in business value.*

In the situation of general economic crisis and negative outcome history managers exhibited risk-averse behavior, thus  $H_0^3$  was accepted: *In the conditions of general economic crisis and previous decline of business value, managers would not accept risk when faced with opportunity of increasing of business value, but will choose certain alternative.*

However, results among Swedish managers were different; in the aforementioned conditions majority of respondents exhibited risk-taking behavior. However, due to the low number of respondents in Sweden, well-grounded conclusions cannot be made, thus this question is left open for further discussion.

Consistently with the studies of Shapira and March (1987), MacGrimmon and Wehrung (1986), the study results showed that majority of managers would exhibit risky behavior when their company fails. As a result,  $H_1^4$  was accepted: *In the conditions of general economic crisis and previous decline of business value, managers would accept risk when faced with a danger of even greater decline of business value.*

At the same time, this hypothesis was not valid for the Estonian respondents. The results showed that in the conditions of economic crisis, where a company has already lost a significant part of its value, managers would avoid risky choices and would tend to make risk-averse decisions and losing certain amount of business value as a result. This difference might be explained by the profile of the Estonian respondents, as majority of the managers who work in micro and small firms perceive significant decline in business value as a threat of total bankruptcy, while for the Ukrainian managers in large firms the same is perceived as a “loss”.

In the beginning it was suggested that economic conditions would influence the degree of the ‘sunk cost effect’. It was suggested that in the conditions of general economic crisis and high competition, managers would be more eager to terminate an unsuccessful investment project than they would in neutral conditions. This suggestion was supported by evidence from the Estonian and Swedish respondents and, consequently, hypothesis  $H_0$  was accepted for these countries. However, with the Ukrainian respondents an opposite result was found, and therefore  $H_1$  was accepted for this country.

Results of the experiment 2.2 showed that  $H_1^6$  should be accepted: *Managers would demand higher probability of success of the project in order to allocate additional funds when the company is performing well than when the company’s performance is bad.*

Generally, the evidence showed that Ukrainian managers exhibit strong risk-taking behavior in dramatic conditions, and much more risk-averse behavior in favorable conditions (in comparison with the two other countries); changes in the preferences of the Estonian managers were much less significant.

3) **Personality** is a very complex category that might be explored from different perspectives: socio-demographic characteristics, personal qualities and preferences, previous experience, and inertia in handling standard situations. This study focused not on the characteristics of each respondent, but on the general aggregated profile of managers in the three countries. The responses to the questionnaire provided the opportunity to compile a picture of an average research participant.

The average participant in Sweden would be a man with high education, who works as a CFO or a CEO in a medium or large company that provides services. He has general work experience of 11 years in the financial field. He has been working for around 4 years in his current position, whether he owns some shares of the company or he is one of the owners. He has not only compulsory but also additional insurances and he does not believe in winning the lottery. Similarly to his equivalents in Estonia and Ukraine, the best investment opportunity for him is to invest in own company or to start a new business, thus he believes in his skills and fortune. He would also be more likely to invest in risky shares of BRIC countries (Brazil, Russia, India, China) in order to get high dividends in the long run. A Swedish financial executive is more patient than, for instance, a Ukrainian one and s/he thinks that a new venture with good perspectives can declare losses in the first three years. This manager is confident in the strength of the national economy and estimates probability of the reoccurrence of financial crisis to be around 50%, however he believes that it will not affect Sweden significantly.

Unlike the average respondent in Sweden, a Ukrainian manager would be a 38 years old woman with higher economic education, who works as an employee in a large company and receives only a salary. She is more adventurous and would like to spend some money playing the lottery. She would also like to invest in own firm, but she would “save” money by investing in real estate or by transferring money to a Swiss bank. A Ukrainian executive, similar to an Estonian one, would be more short-term oriented than a Swedish manager and would like ventures to be a quick success. A manager in Ukraine perceives the economic situation in Ukraine to be very unstable and unhealthy, therefore she predicts that the financial and economic crisis in Ukraine would reoccur in 2012 with 75% probability. That explains why a manager would undertake special measures in the company to minimize probable losses.

The average Estonian respondent is a 40 years old male, who is an employee in a Small and Medium Enterprise (SME) in the trade and service industry. He would like to risk and buy a lottery ticket, but he will not spend a significant sum of money on such risky venture. Two best alternatives for investments would be own company and real estate; he would also save some money in a bank account. He believes that there is a high probability that the financial crisis might occur in Estonia again, both because of the external influence and the national economic problems.

One can see that the general profiles of respondents are similar and comparable, however in each country there was a high variation in the answers. One of the possibilities for further study would be to investigate to what extent the cultural differences, framing and personal characteristics determine risk propensity of economic agent. The questionnaire that was developed for the purposes of the current study enables gathering all necessary data for comparison and estimation; however much higher numbers of respondents would be needed for this type of analysis.

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## Appendix 1. Doing Business statistical data 2004-2012

Economy	Year	Ease of Doing Business Rank	Starting a Business - Rank	Starting a Business - Score	Starting a Business - Rank	Starting a Business - Score	Starting a Business - Cost (% of income)	Dealing with Construction	Dealing with Construction	Dealing with Construction	Dealing with Construction Permits - Cost (% of income)	Getting Electricity - Rank	Registering Property - Rank	Registering Property - Score	Registering Property - Rank	Registering Property - Score	Registering Property - Rank	Registering Property - Score	Getting Credit - Rank	Getting Credit - Strength of	Getting Credit - Depth of	Getting Credit - Public	Getting Credit - Private	Protecting Investors - Rank	Protecting Investors - Score	Protecting Investors - Rank	Protecting Investors - Score	Protecting Investors - Rank	Protecting Investors - Score
EE	2004	..	..	6	72	8	53	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
EE	2005	..	..	6	72	7.5	49.7	..	..	..	..	..	..	3	51	0.7	..	..	6	5	0	9.5	..	..	..	..	..	..	
EE	2006	..	..	6	35	6.2	41.4	..	11	131	29	..	..	3	51	0.7	..	..	6	5	0	12.5	..	8	3	6	5.7		
EE	2007	..	..	6	35	5.1	34.3	..	12	132	24	..	..	3	51	0.7	..	..	6	5	0	18.2	..	8	3	6	5.7		
EE	2008	..	..	5	7	2	28.1	..	12	132	19.7	..	..	3	51	0.5	..	..	6	5	0	19.7	..	8	3	6	5.7		
EE	2009	..	..	5	7	1.7	23.7	..	13	133	16.9	..	..	3	51	0.5	..	..	6	5	0	20.6	..	8	3	6	5.7		
EE	2010	..	..	5	7	1.7	23.2	..	13	133	16.5	..	..	3	18	0.5	..	..	6	5	0	20.6	..	8	3	6	5.7		
EE	2011	18	38	5	7	1.9	25.4	37	13	148	18.3	48	13	3	18	0.5	37	7	5	0	22.4	60	8	3	6	5.7			
EE	2012	24	44	5	7	1.8	24.4	89	13	148	17.8	48	13	3	18	0.4	40	7	5	0	33.1	65	8	3	6	5.7			
SE	2004	..	..	3	15	0.7	38.5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
SE	2005	..	..	3	15	0.7	36.9	..	..	..	..	..	..	2	15	3	..	..	5	4	0	98	..	..	..	..	..	..	
SE	2006	..	..	3	15	0.7	35	..	7	116	95.1	..	..	2	15	3	..	..	7	4	0	100	..	2	4	7	4.3		
SE	2007	..	..	3	15	0.7	33.7	..	7	116	91.7	..	..	2	15	3	..	..	7	4	0	100	..	6	4	7	5.7		
SE	2008	..	..	3	15	0.6	31.1	..	7	116	84.6	..	..	2	15	3	..	..	7	4	0	100	..	6	4	7	5.7		
SE	2009	..	..	3	15	0.6	30.3	..	7	116	82.3	..	..	2	15	3	..	..	7	4	0	100	..	6	4	7	5.7		
SE	2010	..	..	3	15	0.6	28.5	..	7	116	83.3	..	..	2	15	3	..	..	7	4	0	100	..	6	4	7	5.7		
SE	2011	9	40	3	15	0.6	14.7	23	7	116	85.9	6	16	1	7	3	45	7	4	0	100	28	8	4	7	6.3			
SE	2012	14	46	3	15	0.6	14	23	7	116	81.6	8	19	1	7	4.3	48	7	4	0	100	29	8	4	7	6.3			
UA	2004	..	..	15	40	25.6	121.5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
UA	2005	..	..	15	34	17.6	113.9	..	..	..	..	..	..	10	93	6.4	..	..	5	0	0	0	..	..	..	..	..	..	
UA	2006	..	..	15	34	10.6	183	..	29	511	1,006.60	..	..	10	93	5.6	..	..	9	0	0	0	..	1	3	7	3.7		
UA	2007	..	..	10	33	9.2	198.8	..	29	511	829.9	..	..	10	93	4.7	..	..	9	0	0	0	..	1	3	7	3.7		
UA	2008	..	..	10	27	7.8	203.1	..	29	511	676.2	..	..	10	93	4.9	..	..	9	0	0	0	..	1	3	7	3.7		
UA	2009	..	..	10	27	5.5	174.2	..	30	544	1,815.50	..	..	10	93	4.3	..	..	9	3	0	3	..	1	3	7	3.7		
UA	2010	..	..	10	27	5.8	153.5	..	30	528	1,535.00	..	..	10	93	4	..	..	9	3	0	3	..	5	2	7	4.7		
UA	2011	149	118	10	27	6.1	2.2	182	21	375	1,731.40	169	165	10	117	4.1	21	9	4	0	10.1	108	5	2	7	4.7			
UA	2012	152	112	9	24	4.4	1.8	180	21	375	1,462.30	169	166	10	117	3.9	24	9	4	0	17	111	5	2	7	4.7			

Economy	Year	Ease of Doing Business Rank	Paying Taxes - Rank	Paying Taxes - Payments (number)	Paying Taxes - Time (hours per)	Paying Taxes - Profit tax (%)	Paying Taxes - Labor tax and	Paying Taxes - Other taxes (%)	Paying Taxes - Total tax rate (%)	Trading Across Borders - Rank	Trading Across Borders - Documents to	Trading Across Borders - Time to	Trading Across Borders - Cost to	Trading Across Borders -	Trading Across Borders - Time to	Trading Across Borders - Cost to	Enforcing Contracts - Rank	Enforcing Contracts - Time	Enforcing Contracts - Cost	Enforcing Contracts -	Resolving Insolvency - Rank	Resolving Insolvency - Time	Resolving Insolvency - Cost	Resolving Insolvency -
EE	2004	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	425	14.9	34	..	3	9	36.6
EE	2005	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	425	14.9	34	..	3	9	39.2
EE	2006	..	..	7	81	..	..	..	51.1	..	3	5	675	4	5	675	..	425	14.9	34	..	3	9	39
EE	2007	..	..	7	81	..	..	..	49.9	..	3	5	675	4	5	675	..	425	14.9	34	..	3	9	39.9
EE	2008	..	..	7	81	..	..	..	49.2	..	3	5	675	4	5	675	..	425	14.9	34	..	3	9	39.1
EE	2009	..	..	7	81	..	..	..	48.6	..	3	5	730	4	5	740	..	425	14.9	34	..	3	9	37.5
EE	2010	..	..	7	81	..	..	..	49.1	..	3	5	730	4	5	740	..	425	22.3	35	..	3	9	37.5
EE	2011	18	42	7	81	..	..	..	49.6	4	3	5	725	4	5	725	28	425	22.3	35	75	3	9	35.5
EE	2012	24	51	8	85	8	39.4	11.2	58.6	3	3	5	725	4	5	725	29	425	22.3	35	72	3	9	36.9
SE	2004	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	508	31.3	30	..	2	9	81
SE	2005	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	508	31.3	30	..	2	9	72.3
SE	2006	..	..	4	122	..	..	..	54.9	..	3	8	561	3	6	619	..	508	31.3	30	..	2	9	74.9
SE	2007	..	..	4	122	..	..	..	54.9	..	3	8	561	3	6	619	..	508	31.3	30	..	2	9	75.7
SE	2008	..	..	4	122	..	..	..	54.5	..	3	8	561	3	6	619	..	508	31.3	30	..	2	9	74.7
SE	2009	..	..	4	122	..	..	..	54.5	..	3	8	697	3	6	735	..	508	31.3	30	..	2	9	75.1
SE	2010	..	..	4	122	..	..	..	54.6	..	3	8	697	3	6	735	..	508	31.2	30	..	2	9	75.1
SE	2011	9	47	4	122	..	..	..	52.8	7	3	8	697	3	6	735	52	508	31.2	30	18	2	9	77.3
SE	2012	14	50	4	122	15.7	35.5	1.6	52.8	8	3	8	697	3	6	735	54	508	31.2	30	19	2	9	75.8
UA	2004	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	354	41.5	30	..	2.9	42	8.1
UA	2005	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	354	41.5	30	..	2.9	42	8.3
UA	2006	..	..	147	2,085	..	..	..	57.3	..	6	30	1,375	8	36	1,395	..	354	41.5	30	..	2.9	42	8.4
UA	2007	..	..	147	2,085	..	..	..	57	..	6	30	1,375	8	36	1,395	..	354	41.5	30	..	2.9	42	8.7
UA	2008	..	..	147	2,085	..	..	..	56.6	..	6	30	1,375	8	36	1,395	..	354	41.5	30	..	2.9	42	9.1
UA	2009	..	..	147	848	..	..	..	57.2	..	6	30	1,560	8	33	1,580	..	354	41.5	30	..	2.9	42	9.1
UA	2010	..	..	147	736	..	..	..	57.2	..	6	30	1,560	8	33	1,580	..	345	41.5	30	..	2.9	42	9.1
UA	2011	149	181	135	657	..	..	..	55.5	136	6	30	1,560	8	33	1,580	44	345	41.5	30	158	2.9	42	7.9
UA	2012	152	181	135	657	12.2	43.3	1.6	57.1	140	6	30	1,865	8	33	2,155	44	343	41.5	30	156	2.9	42	8.9

Source: Doing Business 2012 www.doingbusiness.org/

Appendix 1 continued

## Appendix 2.1. Questionnaire A and B (English)

<b>ENGLISH</b>
“Financial decision making by CFOs: International studies” Questionnaire A The questionnaire is anonymous. Approximate time for answering questions: I Section – 5 min. II Section – 10-15 min. III Section – 15-30 min.  Please, fill in the whole questionnaire at once (all 3 sections). It is very important, that You would answer all questions.  After each Section there is a free text-box for Your comments, questions, propositions and ideas – we will appreciate Your input a lot! Thank You for Your time.
<b>First section (it is the same for A and B questionnaire)</b>
General information
City
Gender M F
Age
<b>Education</b> High school/ Professional school Higher education (Economics, Finance, Mathematics) Higher education (other) Other
<b>Current position at work</b> How many years do You work on that position?
<b>Are You an employee or business owner?</b> Employee ( receive salary) Employee ( receive salary and own shares of the company ) Owner / Coowner of the company

Main tasks and fields of work

(on Your current position)

Total work experience in the Financial field

(sum of years)

**What is the main field (industry) of the company You are working in?**

Finance (Banking, Insurance, Leasing etc)

Trade (Sales, Commerce)

Production (Manufacturing)

Services

Other

Total amount of employees in Your company

Company's turnover ceiling

(per year, in euro)

**Second section (it is the same for A and B questionnaire)**

1) You have been invited to a charity evening, where an instant lottery is carried out. There are 1000 guests in total at the reception, and each of them has to buy at least 1 lottery ticket. Everyone, however, is free to buy as many tickets as they want, because there is no limit to ticket amount issued per person. All redeemed tickets with the owners' names will be placed into the lottery drum where 1 winning ticket will be randomly selected. Price of one ticket is 10 euro. Declared prize – 10 000 euro. How many tickets would you buy?

(You have enough resources - money and credit card with you)

2) You have received 1.5 million euro inheritance (after taxes) from a distant relative. How would you distribute the money among following investment opportunities?  
(If an option doesn't attract you, please chose € 0. Total amount in answers should not exceed 1.5 million euros)

- Shares of large U.S. stock companies
- Shares of large stock companies in Europe
- Shares of stock companies in the country of residence
- Shares of stock companies in BRIC countries (Brazil, Russia, India, China)
- Government bonds of the country of residence
- Government bonds of the German Government
- U.S. Treasury Bonds
- Deposit in the bank in the country of residence
- Deposit in the Swiss bank
- Deposit in U.S. bank
- Real estate
- Investments in your firm or establishing of the own company
- Cash (consumption)

Other

Appendix 2.1 continued

3. In Your opinion, what is the optimal capital structure (Equity/Debt) in Your industry?

Please, write down the ratio. For example 10% to 90%

4. In Your opinion, what is the maximum period, during which a new promising business could declare losses, before starting to gain profit? (years)

5. Do You (or Your family) have any insurance, apart of compulsory insurance?

Yes

No

6. Do You believe that second wave of financial-economical crisis will come in Your country (or has already reached it)?

7. In Your opinion, what is the probability of recurrence of economic recession and financial crisis during next year?

8. Do you undertake now any actions in the company to reduce losses (damage, risks) in case of recurrence of financial crisis?

(If yes, please specify what kind of actions)

### Third section ( A questionnaire)

This Section consists of the questions that imitate financial situations and decision making in the company. There are no “the right” answers for the questions, we would like to know which answer is the most acceptable (appropriate) for You as the CFO. Questions are not related to each other and appear randomly.

1. One expects that because of difficult economical conditions value of your company might decrease by 600 000 euro. You have two different ways out of the situation. If you choose option A, the company will definitely lose 400 000 euro of its value. For the option B you estimate that there is 1/3 probability not to lose in value, but there is also 2/3 probability to lose entire 600 000 euro of the business value. Which option would you chose?

[code 1.1.Y.]

A. (Company will definitely lose 400 000 euro of its value).

B. (1/3 probability not to lose in value and 2/3 probability to lose entire 600 000 euro of the business value).

2. Your company has gained significant market share and customer loyalty. Due to this, financial performance of the company is steadily growing, and you anticipate the continuation of this trend at least for several years. In order to consolidate market positions, last year your company invested 2.7 million euros in the development of entirely new product. The project was to be completed within six months after the inflow of additional 300 000 euro. However, you have recently received information that your competitor has already launched a similar product that has better quality at a lower price. You asked marketing department to conduct market research and find out whether consumers will be willing to buy your product in new conditions. For yourself, you have decided that ....

[code 2.2.P] Answers 1 and 2 should not be connected to each other.

1) You will make additional investments (300 000 euro) and continue the project if the probability that your product will be in demand is...

2) You will terminate the project and won't invest additional funds if the probability that your product won't be in demand is ...

Appendix 2.1 continued

3. It is financial and economic crisis in the country, your company has already lost 600 000 euro of its value. Two venture investments made in the past are not paying off as well. However, you still have an opportunity to abandon one of the projects. You assume, that if you would continue with project A – company will definitely lose additional 200 000 euro of its value. On the other hand, project B with 2/3 probability will be break-even and won't affect business value at all, but with 1/3 probability it will lead to decreasing of company value for additional 600 000 euro. Which project would you prefer to continue?

|code 1.2.2. Y|

Continue with project A – company will definitely lose additional 200 000 euro of its value.

Continue with project B - 2/3 probability that it won't affect business value at all and 1/3 probability that it will lead to decreasing of company value for additional 600 000 euro.

4. Several years ago, together with the owners of the company you decided to invest 3M euros in R and D project. The project was aimed to develop an innovative product, due to which your firm would be the first to enter a new market that would give you a significant competitive advantage. When you have already invested 2.7M euro and the project was completed by 90%, you received information that your company's competitor has already launched practically the same innovative product, but of much higher quality at a lower price. Management of the company is facing the choice: to continue RandD project and invest necessary 300 000 euros, or terminate the project. Which option would you as CFO advise the owners of the company?

|code 2.1.1. H|

A. To inflow necessary 300 000 euro in R and D project.

B. To use the funds for other purposes and to terminate the project.

5. Due to general economical growth in the country, your company has already added 1M euro to its value, but 2 venture investments made in the past are not paying off. However, you still have an opportunity to abandon one of the projects. You assume, that if you would continue with project A – company will definitely lose 200 000 euro of its value. On the other hand, project B with 2/3 probability won't affect business value at all, but with 1/3 probability it will lead to decreasing of company value for 600 000 euro. Which project would you prefer to continue?

|code 1.2.1. Y|

Continue with project A – company will definitely lose 200 000 euro of its value.

Continue with project B - 2/3 probability that it won't affect business value at all and 1/3 probability that it will lead to decreasing of company value for 600 000 euro.

### **Third section ( B questionnaire)**

1. Due to general economic growth and well-chosen strategy, the value of your company in the current year has increased by 600 000 euros. Marketing department has developed two short-term projects for company development. You have analysed these projects and concluded, that project A guarantees 200 000 euro growth of the company value; project B with 1/3 probability will give an opportunity to raise business value for 600 000 euros, or (with 2/3 probability) won't affect value of the company. The company has free resources for the implementation of one project only. Which project would you suggest to implement?

|code 1.2.1. II|

Project A that guarantees increasing of the firm value for 200 000 euros.

Appendix 2.1 continued

Project B that with 1/3 probability will give an opportunity to raise business value for 600 000 euros, or (with 2/3 probability) won't affect value of the company at all.

2. Several years ago, together with the owners of the company you decided to invest 3M euro in R and D project. The project was aimed to develop an innovative product, due to which your firm would be the first to enter a new market that would give you a significant competitive advantage. You have already invested 2.7M euro in the project. When it was completed by 90%, your company started experiencing serious financial problems, because of the crisis in the banking industry. Furthermore you received information that your company's competitor has already launched practically the same innovative product, but of much higher quality and better price. Management of the company is facing the choice: to continue RandD project and invest necessary 300 000 euros, or terminate the project and use the funds for acute financial needs of the company. Which option would you as CFO advise the owners of the company?

[code 2.1.1.K]

A. To inflow necessary 300 000 euros in R and D project.

B. Terminate the project and use the funds for covering of acute financial needs.

3. It is financial and economic crisis in the country, your company has already lost 600 000 euro of its value. But inspite of this two venture investments made in the past are paying off. Unfortunately, you have resources for continuation of one project only. You have analysed the projects and concluded, that project A guarantees 200 000 euro growth of the company value; project B with 1/3 probability will give an opportunity to return the value of the company to initial level (raise business value for 600 000 euro), but with 2/3 probability it won't affect current value of the company. Which project would you prefer to continue?

[code 1.2.2.II]

Continue with project A that guarantees increasing of the firm value for 200 000 euro.

Continue with project B that with 1/3 probability will give an opportunity to raise business value for 600 000 euro, or with 2/3 probability won't affect current value of the company at all.

4. Industry that your company works in is in very poor conditions. Your company is losing market share. Because of this, financial performance is decreasing rapidly, and you are foreseeing the continuation of this trend for at least several years. Last year aiming for consolidation of market positions, your company invested 2.7M euro in the development of entirely new product. The project has to be completed within six months after the inflow of additional 300 000 euro. However, you have recently received information that your competitor has already launched a similar product that has better quality at a lower price than yours. You asked marketing department to conduct market research and find out whether consumers will be willing to buy your product in new conditions. For yourself, you have decided that ....

[code 2.2.K]

1) You will make additional investments (300 000 euro) and continue the project if the probability that your product will be in demand is...

2) You will terminate the project and won't invest additional funds if the probability that your product won't be in demand is ...

5. One expects that because of difficult economical conditions value of your company might decrease by 600 000 euro. You have two different ways out of the situation. If you choose option A, the company will definitely save 200 000 euro of its value. For the option B you estimate that there is 1/3 probability to save entire 600 000 euro of value, but there is also 2/3 probability of saving nothing out of expected reduction. Which option would you choose?

[code 1.1. II]

A. (Company will definitely save 200 000 euro of its value

B. (1/3 probability to save entire 600 000 euro of value, and 2/3 probability of saving nothing out of expected reduction). )

Appendix 2.1 continued

<https://docs.google.com/spreadsheets/viewform?formkey=dEhnenJpY09XblEzcWNSZmpKbjNaOGc6MA>

<https://docs.google.com/spreadsheets/viewform?formkey=dDdscK5HNTIJOHRjOVN1dTdZZkZJNXc6MA>

## Appendix 2.2. Questionnaire A and B (Estonian)

<b>EESTI</b>
Finantsjuhtide otsustuse langetamise mehhanism Küsimustik A Küsimustik on anonüümne.
Umbkaudne küsimustele vastamise aeg: Osa I - 5 min. Osa II - 10-15 min. Osa III - 15-30 min.
Palun täitke küsimustik ühe korraga (kõik 3 osa). On väga oluline, et vastaksite kõigile küsimustele. Peale iga osa leiate koha, kuhu saate kirjutada oma kommentaarid, küsimused, ettepanekud ja ideed. Oleme teile tagasiside eest väga tänulikud. Täname teid vastamast!
<b>Küsimustiku esimene osa (on sama ankeedis A kui ka B)</b>
Üldinfo
Linn
Sugu M N
Vanus
<b>Haridus</b> Keskharidus, kutsekeskharidus Kõrgharidus (majandus, rahandus, matemaatika) Kõrgharidus (muu) Muu
<b>Praegune ametikoht</b> Kui mitu aastat te sellel ametikohal töötate? Kas olete palgatöötaja või firmaomanik? Palgatöötaja Palgatöötaja, kui ka oman osa ettevõttes Omanik / Kaasomanik
<b>Peamised tööülesanded ja tegevusvaldkonnad</b> (teie praegusel ametikohal) <b>Töökogemus kokku rahandusvaldkonnas</b> (aastates) ).

Appendix 2.2 continued

**Mis on teie ettevõtte peamine tegevusvaldkond?**

Rahandus (pangandus, kindlustus, liising jne)

Kaubandus (müük)

Tootmine

Teenused

Muu

Teie ettevõtte töötajate arv

Ettevõtte käibe suurus

(aastas, eurodes)

**Küsimustiku teine osa (on sama ankeedis A kui ka B)**

Teid on kutsutud heategevuslikule tulundusõhtule, kus viiakse läbi kiirloterii. Vastuvõtul on ühtekokku 1000 küalist, kellest igauks peab ostma vähemalt ühe loteriipileti, kuid kõigil on lubatud osta nii mitu piletit, kui nad soovivad, sest pileтите arv pole piiratud. Kõik lunastatud piletid, millele märgitakse nende omanike nimed, pannakse loosirattasse, kust võetakse juhuslikult välja üks võidupilet. Ühe pileti hinnaks on 10 eurot. Väljakuulutatud auhinna väärtus on 10 000 eurot. Kui mitu piletit te ostaksite?

(Teil on kaasas piisavalt vahendeid - raha ja krediitkaart)

1) Olete saanud kaugelt sugulaselt päranduse, mille väärtuseks on 1,5 miljonit eurot (pärast makse). Kuidas jaotaksite oma raha järgmiste investeerimisvõimaluste vahel?

(Kui mõni valikuvõimalus ei huvita teid üldse, valige 0 eurot. Vastuste summa ei tohi ületada 1,5 miljonit eurot)

Suurte USA firmade aktsiad

Suurte Euroopa firmade aktsiad

Teie asukohamaa suurte firmade aktsiad

BRIC riikide (Brasiilia, Venemaa, India, Hiina) suurte firmade aktsiad

Teie asukohamaa valitsuse võlakirjad

Saksa valitsuse võlakirjad

USA riigikassa võlakirjad

Hoiused teie asukohariigi pangas

Hoiused Šveitsi pangas

Hoiused USA pangas

Kinnisvara

Investeeringud oma firmasse või oma firma loomine

Sularaha (tarbimine)

Muu

3. Milline on teie arvates optimaalne kapitalistruktuur (Omakapital/ Võõrkapital) teie valdkonna ettevõttes? Kirjutage, palun, suhtena protsentides, näiteks 10% / 90%

1. Milline on teie arvates maksimaalne ajaperiood, mille jooksul uus paljutõotav äri võiks kanda kahju, enne kui see hakkab teenima kasumit? (aastates)

Appendix 2.2 continued

5. Kas teil (või teie perekonnal) on lisaks kohustuslikule kindlustusele veel mingisugune kindlustus?

Jah

Ei

6. Kas usute, et teie riiki tabab (või on juba tabanud) rahandus- ja majanduskriisi teine laine?

7. Mis on teie arvates majanduslanguse ja rahanduskriisi kordumise võimalus järgmise aasta jooksul?

8. Kas viite praegu ettevõttes läbi mingeid toiminguid, et võimaliku korduva rahanduskriisi korral kahjumit vähendada (kahju, riskid)?

(Kui jah, täpsustage, milliseid toiminguid)

### Küsimustiku kolmas osa ( ankeet A )

See osa sisaldab küsimusi, mis jäljendavad rahandussituatsioonidega seotud otsustusprotsesse ettevõttes. "Õigeid" vastuseid pole, sooviksime lihtsalt teada, milline vastus on teie kui finantsjuhi meelest kõige sobilikum. Küsimused ei ole omavahel seotud ja esinevad juhuslikus järjekorras.

1. Prognoositakse, et keerulise majandusolukorra tõttu väheneb teie ettevõtte väärtus 600 000 euro võrra. Teil on olukorra parandamiseks kaks võimalust. Kui teete valiku A, kaotab ettevõtte kindlasti 400 000 eurot oma väärtusest. Valiku B korral on teil 1/3 tõenäosus ettevõtte väärtuses mitte kaotada, kuid samal ajal 2/3 tõenäosus kaotada kogu 600 000 eurot. Millise valiku teeksite?

[kood 1.1.Y.]

A. (Firma kaotab kindlasti 400 000 eurot oma väärtusest).

B. (1/3 tõenäosus ettevõtte väärtuses mitte kaotada, kuid samal ajal 2/3 tõenäosus kaotada kogu 600 000 eurot).

2. Teie firma on võitnud märkimisväärse turuosa ja kliendilojaalsuse. Tänu sellele on ettevõtte rahandustulemused pidevas kasvus ning te eeldate selle trendi jätkumist vähemalt paari järgneva aasta jooksul. Turupositsiooni kindlustamiseks investeeris teie firma eelmisel aastal 2,7 miljonit eurot täiesti uue toote väljaarendamisse. Projekt pidanuks jõudma lõpule täiendava 300 000 euro investeerimise järel. Saite aga hiljuti informatsiooni, et teie ettevõtte konkurent on turule toonud sisuliselt sama toote, kuid seejuures kõrgema kvaliteediga ja madalama hinnaga. Palusite turundusosakonnal läbi viia turu-uuringu, et välja selgitada, kas tarbijad sooviksid osta teie toodet muutunud tingimustel. Teie ise olete otsustanud, et...

[kood 2.2.P] Vastused 1 ja 2 ei ole teineteisega seotud.

1) Teete täiendavaid investeeringuid (300 000 eurot) ja jätkate projektiga, kui teie toote vastu on nõudlus tõenäosusega...

2) Katkestate projekti ning ei investeerita täiendavalt, kui teie toote vastu pole nõudlust tõenäosusega

3. Teie riigis on rahandus- ja majanduskriis ning teie ettevõtte on juba kaotanud 600 000 eurot oma väärtusest. Minevikus tehtud kaks riskikapitaliinvesteeringut ei tasunud ära. Oletate, et kui jätkaksite projektiga A, siis kaotab ettevõtte kindlasti veel 200 000 eurot oma väärtusest. Samas, projekt B oleks 2/3 tõenäosusega kasumi lävel ega mõjutaks ettevõtte väärtust üldse, kuid 1/3 tõenäosusega viiks see ettevõtte väärtuse kahanemiseni veel 600 000 euro võrra.

[kood 1.2.2. Y]

Jätkate projektiga A - ettevõtte kaotab kindlasti täiendavad 200 000 eurot oma väärtusest.

Jätkate projektiga B - on 2/3 tõenäosus, et teie ettevõtte väärtust see ei muuda ning 1/3 tõenäosus, et see viib ettevõtte väärtuse kahanemiseni täiendava 600 000 euro võrra.

).

Appendix 2.2 continued

4. Mõned aastad tagasi otsustasite koos ettevõtte omanikega, et investeerite 3 miljonit eurot TandA(teadus ja arendus) projekti. Projekti eesmärgiks oli välja töötada uuenduslik toode, mis oleks teie ettevõttel võimaldanud esimesena siseneda uuele turule, mis oleks andnud teile olulise konkurentsieelise. Kui olite investeerinud juba 2,7 miljonit eurot ja projekt oli 90% ulatuses lõpetatud, saite informatsiooni, et teie ettevõtte konkurent on turule toonud sisuliselt sama uuendusliku toote, kuid seejuures oluliselt kõrgema kvaliteediga ja madalama hinnaga. Ettevõtte juhtkond seisab silmitsi valikuga: kas jätkata TandA projektiga ning investeerida täiendavad 300 000 eurot või katkestada projekt. Millist valikut soovitasite teie kui finantsjuht ettevõtte omanikele?

| kood 2.1.1. H |

A. Suunata TandA projekti lõpetamiseks vajalikud 300 000 eurot.

B. Katkestada projekt ja kasutada 300 000 eurot teistel äriatel eesmärkidel.

5. Tänu üldisele majanduskasvule teie riigis on teie ettevõtte väärtus kasvanud juba 1 miljoni euro võrra, kuid kaks minevikus tehtud investeeringut ei tasunud ennast ära. Teil on veel võimalus üks neist projektidest hüljata. Oletate, et kui jätkate projektiga A, siis kaotab ettevõtte kindlasti 200 000 eurot oma väärtusest. Samas on 2/3 tõenäosus, et projekt B ei mõjuta ettevõtte väärtust üldse, kuid 1/3 tõenäosus, et ettevõtte kaotab 600 000 eurot oma väärtusest. Millise projektiga eelistaksite jätkata?

| kood 1.2.1. Y |

Jätkate projektiga A - firma kaotab kindlasti 200 000 eurot oma väärtusest.

Jätkate projektiga B - 2/3 tõenäosus, et projekt B ei mõjuta ettevõtte väärtust üldse, kuid 1/3 tõenäosus, et ettevõtte kaotab 600 000 eurot oma väärtusest.

### **Küsimustiku kolmas osa ( ankeet B )**

1. Tänu üldisele majanduskasvule ja hästi valitud strateegiale on teie ettevõtte väärtus käesoleval aastal tõusnud 600 000 euro võrra. Turundusosakond on ettevõtte arenguks välja töötanud kaks lühiajalist projekti. Olete neid projekte analüüsinud ja jõudnud järeldusele, et projekt A garanteerib ettevõtte väärtuse tõusu 200 000 euro võrra; projekt B annab 1/3 tõenäosusega võimaluse ettevõtte väärtuse kasvuks 600 000 euro võrra või (2/3 tõenäosusega) ei osuta ettevõtte väärtusele mingit mõju. Ettevõttel on vabu vahendeid ainult ühe projekti elluviimiseks. Millist projekti soovitasite ellu viia?

| kood 1.2.1. II |

Projekti A, mis garanteerib ettevõtte väärtuse tõusu 200 000 euro võrra.

Projekti B, mis annab 1/3 tõenäosusega võimaluse ettevõtte väärtuse kasvuks 600 000 euro võrra või (2/3 tõenäosusega) ei osuta ettevõtte väärtusele mingit mõju.

2. Mõned aastad tagasi otsustasite koos ettevõtte omanikega, et investeerite 3 miljonit eurot TandA(teadus- ja arendustöö) projekti. Projekti eesmärgiks oli välja töötada uuenduslik toode, mis oleks teie ettevõttel võimaldanud esimesena siseneda uuele turule, mis oleks andnud teile olulise konkurentsieelise. Olete sellesse projekti investeerinud juba 2,7 miljonit eurot. Kui projekt oli 90% ulatuses lõpetatud, tekkisid teie ettevõttel pangandussektori kriisi tõttu tõsised finantsprobleemid. Lisaks saite informatsiooni, et teie ettevõtte konkurent on turule toonud sisuliselt sama uuendusliku toote, kuid seejuures oluliselt kõrgema kvaliteediga. Ettevõtte juhtkond seisab silmitsi valikuga: kas jätkata TandA projektiga ning investeerida täiendavad 300 000 eurot või katkestada projekt ning kasutada vabanevat raha ettevõtte kiirete rahaliste vajaduste katteks. Millist valikut soovitasite teie kui finantsjuht ettevõtte omanikele?

| kood 2.1.1.K |

A. Suunata vajalikud 300 000 eurot TandA projekti.

B. Projekti katkestada ja kasutada vabanevat raha kiirete rahaliste vajaduste katteks. ).

Appendix 2.2 continued

3. Teie riigis on rahandus- ja majanduskriis ning teie ettevõtte on juba kaotanud 600 000 eurot oma väärtusest. Vaatamata sellele, minevikus tehtud kaks riskikapitaliinvesteeringut toodavad ennast tagasi. Kahjuks on teil vahendeid ainult ühe projekti jätkamiseks. Olete projekte analüüsinud ja jõudnud järeldusele, et projekt A garanteerib ettevõtte väärtuse kasvu 200 000 euro võrra; projekt B annaks 1/3 tõenäosusega võimaluse viia ettevõtte väärtus algtasemele ehk kasvatada ettevõtte väärtust 600 000 euro võrra, kuid 2/3 tõenäosusega ei mõjutaks see ettevõtte praegust väärtust. Millist projekti eelistaksite?

|kood 1.2.2.II|

Jätkate projektiga A, mis garanteerib ettevõtte väärtuse kasvu 200 000 euro võrra.

Jätkate projektiga B, mis annaks 1/3 tõenäosusega võimaluse tõsta ettevõtte väärtust 600 000 euro võrra, kuid 2/3 tõenäosusega ei mõjutaks see ettevõtte praegust väärtust.

4. Valdkond, milles teie ettevõtte tegutseb, on viletsas seisukorras. Teie ettevõtte kaotab turuosa. Seetõttu väheneb kasum väga kiiresti ning te prognoosite selle trendi jätkumist vähemalt paari järgmise aasta jooksul. Eelmisel aastal investeeris teie ettevõtte turupositsiooni hoidmise eesmärgil 2,7 miljonit eurot täiesti uue toote väljatöötamisse. Projekt tuleks lõpetada järgmise 6 kuu jooksul ning sinna tuleb suunata veel investeeringuid 300 000 euro ulatuses. Saite aga hiljuti informatsiooni, et teie ettevõtte konkurent on turule toonud sisuliselt sama toote, kuid seejuures kõrgema kvaliteediga ja madalama hinnaga. Palusite turundusosakonnal läbi viia turu-uuringu, et välja selgitada, kas tarbijad sooviksid osta teie toodet muutunud tingimustel. Teie ise olete otsustanud, et...

|kood 2.2.K|

1) Teete täiendavaid investeeringuid (300 000 eurot) ja jätkate projektiga, kui tõenäosus on ..., et teie toote vastu on nõudlus.

2) Katkestate projekti ning ei investeerita täiendavalt, kui tõenäosus on ..., et teie toote vastu pole nõudlust.

5. Prognoositakse, et keerulise majandusolukorra tõttu võib teie ettevõtte väärtus väheneda 600 000 euro võrra. Teil on olukorra parandamiseks kaks võimalust. Kui teete valiku A, säilitab ettevõtte kindlasti 200 000 eurot oma väärtusest. Valiku B korral on teil 1/3 tõenäosus säilitada kogu 600 000 eurot, kuid samal ajal ka 2/3 tõenäosus et te ei säilita ettevõtte väärtust prognoositavast langusest. Millise valiku teeksite?

|kood 1.1.II|

A. (Ettevõtte säästab kindlasti 200 000 eurot oma väärtusest).

B. (1/3 tõenäosus, et ettevõtte säilitab 600 000 eurot oma väärtusest, kuid samal ajal ka 2/3 tõenäosus, et te ei säilita ettevõtte väärtust prognoositavast langusest).

<https://docs.google.com/spreadsheet/viewform?formkey=dDdVNFlqLVIfOFRCSkrBvUIOcEZ6SEE6MA>

<https://docs.google.com/spreadsheet/viewform?formkey=dGJ2VVdjYVBCNG1mcERqNnk1N3plVVE6MA>

Appendix 2.2 continued

## Appendix 2.3. Questionnaire A and B (Russian)

<b>РУССКИЙ</b>
"Исследование механизма принятия решений финансовыми менеджерами" Анкета А
Анкетирование проводится анонимно.
Ориентировочное время заполнения:
Блок I - 5 мин.
Блок II - 10-15 мин.
Блок III - 15-30 мин.
Пожалуйста, заполните всю анкету (все 3 блока) за 1 раз. Очень важно, чтобы все поля были заполнены. После каждого блока Вы можете оставить свои комментарии, вопросы, идеи. Нам интересно Ваше мнение! Спасибо за ваше время!
<b>Первый блок (одинаковые вопросы для обеих анкет А и Б)</b>
Общая информация
Город
Пол
М
Ж
Возраст
<b>Образование</b>
Среднее, среднее специальное
Высшее (экономическое, финансовое, математическое)
Высшее (другое)
Другое
Текущая должность на предприятии?
Как долго вы работаете на этой должности ? (лет)
Являетесь ли вы наемным работником или совладельцем фирмы?
Наёмный работник (получаю заработную плату)
Наёмный работник (получаю заработную плату и имею долю в предприятии)
Владелец фирмы/ Совладелец фирмы

Appendix 2.3 continued

Ваша основная сфера деятельности и задачи

(на занимаемой должности)

Общий опыт работы в сфере финансов (сумма лет)

**В какой отрасли в основном работает ваша компания?**

- Финансовая (банковская, страховая, лизинговая)
- Торговля
- Производство
- Услуги
- Другая

Общее количество сотрудников в вашей компании

Годовой валовой оборот вашей компании

**Второй блок (одинаковые вопросы для обеих анкет А и Б)**

1. Вы приглашены на благотворительный прием, на котором проводят моментальную лотерею. На приеме 1000 гостей. Каждый из гостей должен купить минимум 1 билет, но участники могут приобрести и любое другое количество, так как количество выпускаемых билетов не ограничено. Все купленные билеты с именами владельцев будут опущены в барабан, из которого случайным образом достанут один выигрышный билет. Стоимость одного билета 10 евро. Объявленная сумма выигрыша – 10 000 евро. Сколько билетов вы бы купили? (При учете, что у вас с собой есть достаточно средств – наличные, кредитная карточка и т.п)

2. Вы получили в наследство от своего дальнего родственника 1 500 000 евро (за вычетом налогов). Как бы вы распределили полученные деньги между следующими возможностями вложений?

(Если вариант вас не привлекает, поставьте, пожалуйста, 0 евро. В сумме, ответы не должны превышать 1.5 млн. евро)

- Акции крупных биржевых компаний США
- Акции крупных биржевых компаний Европы
- Акции биржевых компаний страны проживания
- Акции биржевых компаний стран БРИК
- Государственные облигации страны проживания
- Государственные облигации правительства Германии
- Облигации Казначейства США
- Депозит банка страны проживания
- Депозит в Швейцарском банке
- Депозит в банке США
- Недвижимость (уточните в какой стране, если у вас есть предпочтения) \_\_\_\_\_
- Вложения в свою фирму или открытие новой собственной фирмы
- Наличные (направил/а бы в потребление)

Другое

Appendix 2.3 continued

3. По вашему мнению, какова оптимальная структура капитала (Собственный капитал/ Заемный капитал), для фирмы из вашей отрасли?

Поставьте, пожалуйста, процентное соотношение, например 10% к 90%.

4. Каков максимальный период, в течение которого новый перспективный бизнес может работать в убыток, перед тем как начать приносить прибыль, вы считаете приемлемым? (лет)

5. Есть ли у вас (вашей семьи) какие-либо страховые полисы, кроме обязательных?

Да  
Нет

6. Считаете ли вы, что страну накроет (или уже накрыла) вторая волна финансово-экономического кризиса?

7. С какой вероятностью вы оцениваете наступление кризиса в ближайший год?

8. Предпринимаете ли вы какие-либо меры на предприятии, чтобы снизить потери (убытки, риски) в случае наступления финансового кризиса?

(Если ДА, то уточните, пожалуйста, какие)

### Третий блок ( анкета А )

Блок состоит из вопросов, которые моделируют принятие финансовых решений на предприятии. На эти вопросы нет единого правильного ответа, нам важно узнать, какие варианты наиболее приемлемы именно для вас как финансового менеджера. Вопросы не связаны между собой и представлены в анкете в случайном порядке.

1. Ожидается, что из-за сложных экономических условий ваша фирма потеряет 600 000 евро своей стоимости. У вас есть 2 возможности выхода из сложившейся ситуации. Выбирая вариант А – фирма наверняка потеряет 400 000 евро своей стоимости. Вариант Б с вероятностью  $1/3$  даст возможность сохранить полную стоимость компании, но с вероятностью  $2/3$  - стоимость компании всё-таки снизится на 600 000 евро. Какой из вариантов вы выберете?

[код вопроса 1.1.У.]

А. (Компания наверняка потеряет в стоимости 400 000 евро)

Б. (С вероятностью  $1/3$  компания не потеряет в стоимости, но с вероятностью  $2/3$  потеряет 600 000 евро стоимости)

2. Ваше предприятие завоевало значительную долю рынка, а также лояльность клиентов. Благодаря этому, финансовые показатели предприятия стабильно растут, и вы предвидите продолжение данной тенденции, как минимум на несколько лет. С целью закрепления позиций на рынке в прошлом году ваша фирма вложила 2 700 000 евро в разработку совершенно нового продукта. Проект должен был быть завершен через полгода после вливания дополнительных 300 000 евро. Однако, недавно к вам поступила информация, что фирма-конкурент уже выпустила на рынок аналогичный продукт, который обладает более высоким качеством при более низкой цене, чем ваш. Вы поручили маркетинговому отделу провести исследование рынка, чтобы узнать, будут ли потребители покупать ваш продукт в новых условиях. А для себя, вы решили, что....

[2.2. Р]

Ответы 1 и 2 не должны быть связаны между собой.

1) Вы будете вкладывать дополнительные инвестиции (300 000 евро) и продолжать проект, если вероятность того, что ваш продукт будут покупать, составит...

Appendix 2.3 continued

2) Вы остановите проект и не будете вкладывать средства, если вероятность того, что ваш продукт совершенно не будет пользоваться спросом, составит...

3. В стране финансово-экономический кризис, стоимость вашей компании уже упала на 600 000 евро. Венчурные инвестиции в 2 проекта, сделанные в прошлом, также не оправдали себя, однако у вас все еще есть возможность отказаться от одного проекта. Вы предполагаете, что если оставить проект А, он точно приведет к дальнейшему снижению стоимости фирмы в размере 200 000 евро. С другой стороны, проект Б с вероятностью  $\frac{2}{3}$  окажется безубыточным и никак не повлияет на стоимость компании, но с вероятностью  $\frac{1}{3}$  может привести к снижению стоимости компании еще на 600 000 евро. Какой проект вы предпочтете оставить?

|код вопроса 1.2.2. У|

Оставить проект А, который точно снизит стоимость компании на 200 000 евро.

Оставить проект Б, который с вероятностью  $\frac{2}{3}$  никак не повлияет на стоимость компании, но с вероятностью  $\frac{1}{3}$  может привести к снижению стоимости компании еще на 600 000 евро.

4. Несколько лет назад совместно с владельцами предприятия вы решили вложить 3 млн. евро в RandD проект (исследования и разработки). Проект заключался в разработке инновационного продукта, благодаря которому ваша фирма могла первой выйти на новый рынок, что дало бы вам значительные конкурентные преимущества. Когда вы уже вложили 2.7 млн. евро, а проект был завершен на 90%, вы узнали, что компания-конкурент успела первой запустить в продажу практически аналогичный инновационный продукт, но гораздо высшего качества при более низкой цене. Руководство фирмы оказалось перед выбором: продолжать исследовательский проект и вложить в него необходимые 300 000 евро или же закрыть проект. Какой вариант вы как финансовый директор посоветовали бы владельцам предприятия?

|код вопроса 2.1.1. Н|

А. Вложить необходимые 300 000 евро в RandD проект.

Б. Использовать средства для других целей и закрыть проект.

5. Благодаря общему экономическому подъему стоимость вашего предприятия выросла на 1 млн. евро. Однако венчурные инвестиции в 2 проекта, сделанные в прошлом, не оправдали себя. У вас все еще есть возможность отказаться от одного проекта. Проанализировав проекты, вы пришли к выводу, что проект А приведет к падению стоимости компании на 200 000 евро. Проект Б с вероятностью  $\frac{2}{3}$  не повлияет на текущую стоимость компании, но с вероятностью  $\frac{1}{3}$  может привести к падению стоимости предприятия на 600 000 евро. Какой проект вы предпочтете оставить?

|код вопроса 1.2.1. Y|

Оставить проект А, который приведет к падению стоимости предприятия на 200 000 евро.

Оставить проект Б, который с вероятностью  $\frac{2}{3}$  не повлияет на текущую стоимость компании, но с вероятностью  $\frac{1}{3}$  приведет к падению стоимости на 600 000 евро.

Appendix 2.3 continued

### Третий блок ( анкета В )

1. Благодаря общему экономическому подъему и правильно выбранной стратегии, стоимость вашей фирмы в текущем году возросла на 600 000 евро. Маркетинговый отдел разработал два краткосрочных проекта развития компании. Вы проанализировали предложенные проекты и сделали вывод, что проект А гарантированно повысит стоимость фирмы на 200 000 евро, а проект Б с вероятностью 1/3 даст возможность повысить стоимость компании на 600 000 евро, либо (с вероятностью 2/3) никак не повлияет на стоимость компании. Фирма располагает свободными ресурсами для внедрения только одного проекта. Какой из проектов вы бы предложили к реализации?

|код вопроса 1.2.1. П|

Проект А, который гарантированно повысит стоимость фирмы на 200 000 евро.

Проект Б который с вероятностью 1/3 даст возможность повысить стоимость компании на 600 000 евро, или с вероятностью 2/3 не повлияет на стоимость вовсе.

2. Несколько лет назад, совместно с владельцами предприятия, вы решили вложить 3 млн. евро в RandD проект (исследование и разработка). Проект заключался в разработке инновационного продукта, благодаря которому ваша фирма могла первой выйти на новый рынок, что дало бы вам значительные конкурентные преимущества. Вы уже вложили в исследования 2.7 млн. евро. Когда проект был завершен приблизительно на 90%, у вашего предприятия начались серьезные финансовые проблемы из-за кризиса в банковском секторе. Кроме того, компания-конкурент успела первой запустить в продажу практически аналогичный инновационный продукт, однако лучшего качества по более низкой цене. Руководство фирмы оказалось перед выбором: продолжать исследовательский проект и вложить в него необходимые 300 000 евро, или же закрыть проект и использовать средства на острые финансовые нужды предприятия. Какой вариант вы как финансовый директор посоветовали бы владельцам предприятия?

|код вопроса 2.1.1.К|

А. Вложить необходимые 300 000 евро в RandD проект.

Б. Закрыть проект и использовать средства на покрытие острых финансовых расходов.

3. В стране финансово-экономический кризис, ваша компания уже потеряла 600 000 евро своей стоимости. Однако венчурные инвестиции в 2 проекта, сделанные в прошлом, оправдали себя. К сожалению, у вас есть ресурсы оставить только 1 проект. Вы оценили оба проекта и пришли к следующим выводам: проект А гарантированно позволит повысить стоимость компании на 200 000 евро. Проект Б с вероятностью 1/3 может вернуть стоимость компании к начальному уровню (повысить стоимость на 600 000 евро), но с вероятностью 2/3 не окажет никакого влияния на текущую стоимость предприятия. Какой проект вы предпочтете оставить?

|код вопроса 1.2.2.П|

Оставить проект А, который повысит стоимость компании на 200 000 евро.

Оставить проект Б, который с вероятностью 1/3 повысит стоимость компании на 600 000 евро, или с вероятностью 2/3 не окажет влияния на текущую стоимость.

4. В отрасли сложилась очень неблагоприятная экономическая ситуация. Ваше предприятие теряет рыночные позиции. Из-за этого, финансовые показатели предприятия стремительно падают, и вы предвидите продолжение данной тенденции, как минимум на несколько лет. С целью закрепления позиций на рынке в прошлом году ваша фирма вложила 2.7 млн евро в разработку совершенно нового продукта. Проект должен был быть завершен через полгода, после вливания дополнительных 300 000 евро. Однако недавно к вам поступила информация, что фирма-конкурент уже выпустила на рынок аналогичный продукт, который обладает более высоким качеством, чем ваш, причём при более низкой цене. Вы поручили маркетинговому отделу провести исследование рынка, чтобы узнать будут ли потребители покупать ваш продукт в новых условиях. А для себя, вы решили, что....

|код вопроса 2.2.К|

1) Вы будете вкладывать дополнительные инвестиции (300 000 евро) и продолжать проект, если вероятность того, что ваш продукт будут покупать, составит ...

2) Вы остановите проект и не будете вкладывать средства, если вероятность того, что ваш продукт совершенно не будет пользоваться спросом, составит...

5. Ожидается, что из-за сложных экономических условий, ваша фирма потеряет 600 000 евро своей стоимости. У вас есть 2 возможности выхода из сложившейся ситуации. Выбирая вариант А, фирма точно сохранит хотя бы 200 000 евро своей стоимости. Вариант Б с вероятностью  $\frac{1}{3}$  даст вам возможность сохранить изначальную стоимость компании (т.е. сохранить 600 000 евро стоимости), но с вероятностью  $\frac{2}{3}$  вы не спасете стоимость компании от прогнозируемого падения. Какой из вариантов вы выберете?

|код вопроса 1.1. П|

А. Наверняка сохранить 200 000 евро стоимости компании.

Б. С вероятностью  $\frac{1}{3}$  сохранить 600 000 евро стоимости, но с вероятностью  $\frac{2}{3}$  не спасти компанию от прогнозируемого падения стоимости.

<https://docs.google.com/spreadsheet/viewform?pli=1andformkey=dG1jeGUzbE5hNUZ6SVBOajBaNXRLefe6MQ#gid=0>

<https://docs.google.com/spreadsheet/viewform?formkey=dC04S05WX1U4OWtaRGRZS011alZWaXc6MA#gid=0>

Appendix 2.3 continued

### Appendix 3. Profile of the respondents

	Total	Sweden	Estonia	Ukraine
<b>Respondents (per country)</b>	<b>58</b>	11	24	23
<b>Age (years)</b>				
min	22	26	26	22
max	60	58	52	60
average	39	38	40	38
st. div	8.6	10	8.4	8.5
mode	33	33	45	33
<b>Gender</b>		Respondents		
Male	34	8	19	7
Female	24	3	5	16
<b>Working on current position (years)</b>				
Min	0.5	0.5	1	1
Max	20	11	18	20
Average	6.7	4	7	7
St.Div	5	4	5	6
Mode	10	2	10	10
<b>Work experience in financial field</b>				
Min	0.5	0.5	3	2
Max	40	25	25	40
Average	12	11	11	13
St.Div	7	9	6	7.7
Mode	10	25	10	11
<b>Company Size</b>				
Micro	19	3	15	1
Small	17	4	6	7
Medium	9	1	1	7
Large	13	3	2	8

	Total	Sweden	Estonia	Ukraine
<b>Respondents (per country)</b>	<b>58</b>	11	24	23
<b>Engagement into business</b>				
Employee( receive salary)	32	4	10	18
Employee( receive salary and own shares of the company)	10	3	3	4
Owner/Co-owner	16	4	11	1
<b>Industry of company</b>				
Finance	3		1	2
Trade	16		9	7
Production	11	3	4	4
Services	24	3	8	13
Other (IT, Housing)	11	5	4	2
<b>Education</b>				
High school/ Profession school	6	0	6	0
Higher education (Economics, Finance, Mathematics)	38	8	11	19
Higher education (other)	14	3	7	4
<b>Position</b>				
CEO	20	7	11	2
Chairman (member) of the board	4	1	3	
Head of the project	2		1	1
Business developer	1	1		
Entrepreneur	1		1	
Other management	5	1	1	3
CFO	16	1	6	9
Chief accountant and controller	4		1	3
Director deputy in economy and finance	4			4
Director of audit department	1			1

## RESÜMEE

### FINANTSJUHTIDE RISKIKALDUVUS: RIIKIDEVAHELINE VÕRDLUS

Anastasiia Linnas

Riigi majandus on keeruline süsteem, kus finants-, tööstus- ja demograafilised protsessid on üksteisega tihedalt läbipõimunud. Kui analüüsida sellist keerukat süsteemi, on praktiliselt võimatu teha täpseid ennustusi, mis peegeldaksid reaalse majanduse seisutulevikus – igal juhul tulevad ette mõningad kõrvalekaldumised. Seevastu saab ennustada mõningat tõenäosusega trende, ja stsenaariume ning arvata suundumusi ja indikaatoreid.

Rääkides tõenäosusest, puutume samal ajal tihedalt kokku riski temaatikaga. Näiteks teatud sündmuse toimumine mingi kindlusega tähendab et eksisteerib vastupidine risk, mil sündmus ei toimu.

Klassikalises “homo economicuse” teoorias peetakse indiviidi ratsionaalseks ja ta otsustused toetuvad kasulikkuse funktsioonile. Vastupidiselt sellele, käitumuslikus rahanduse teoorias langetab individ otsuseid lähtudes oma subjektiivsetest ja irratsionaalsetest uskumustest. Seega sellised parameetrid nagu riskikalduvus, riskitaju, riskitaluvus määratleksid majandussubjektide riskantsete otsuste tegemist.

Eelnevad uuringud riski-võtmise ja käitumise valdkonnas on peamiselt viidud läbi tudengite, leibkondade ja individuaalsete investorite seas. Paljud tööd finantsteemalise riskikäitumise uuringutes on tehtud investimisportfoolio, väärtpaberi turu fluktuatsiooni ja ettevõtte dividendipoliitika teemadel. Seevastu kaasagne finantsmajandus ei ole ainult väärtpaberi turg, kuna ettevõtted on kaasatud erinevatesse

finantssuhetesse läbi investeerimisprojektide, laenude, kapitalstruktuuri strateegiate jne. Finantsjuhid vastutavad sageli finantsotsuste eest ja nende vaated finantsteemadele mõjutavad ettevõtte finantsstrateegiat ja kokkuvõttes kogu riigi majanduslikku kliimat. Meie arvates on tähtis uurida finantsjuhtide käitumist erinevates majanduskeskkondades. 2008. aasta finants-manaduslik kriis paljastas irratsionaalsete ja riskantsete valikute võimalikke tagajärgi, mis tõstab selle töö teema aktuaalsust. Riskikalduvust mõjutavate faktorite mõistmine, kui ka tähtsaimate otsustajate riskikäitumise eelistusprofiilide koostamine aitab parandada finantsproгноoside koostmist nii mikro - väikeettevõtte, kui ka makro - rahvusliku majanduse tasandil.

Autor eeldab, et juhtide riskikalduvust mõjutab ärikeskkond, organisatsiooni kui ka kultuuri normid. Uurimistöö eesmärgiks on leida finantsjuhtide riskikalduvuse sarnasused, erinevused ja mustrid erinevates ärikeskkondades võrreldes Eesti, Rootsi ja Ukraina finantsjuhtide suhtelist riskitaluvust. Eesmärgi täitmiseks on püstitatud järgmised ülesanded:

- analüüsida eksisteerivate riski-võtmise käitumise konseptsioone majanduses.
- koostada kokkuvõtlik riskitaluvuse teooria raamistik skikalduvuse;
- koostada eelnevate uuringute kohta ülevaatlik analüüs;
- koostada küsimustik, mis võimaldab hinnata juhtide riskikalduvust lähtudes rahanduslikust vaatenurgast;
- koostada kolme riigi majanduskeskkonna ülevaade, mille põhjal kirjeldada finantsjuhtide profiili Eestis, Rootsis ja Ukrainas;
- võrrelda kolme riigi finantsjuhtide eelistuste erinevusi riski käitumises.

Selles uuringus testitakse kuus paari hüpoteese finantsjuhtide riskikalduvuse kohta. Selleks viidi läbi küsimustik ja saadud tulemusi analüüsiti kasutades graafilisi, statistilisi ja matemaatilisi meetodeid.

Toetudes teoreetilistele konseptsioonidele ja töös püstitatud eesmärkidele, sünteesis autor raamistiku, mis kirjeldab peamisi riskikalduvust mõjutavaid tegureid, mida kirjeldatakse riskikalduvuse ringmudelil. Mudel on esitletud kolmes peamises dimensioonis, mida peaks arvestama majandussubjektide riskikalduvuse hindamisel: kontekst, raamistik ja isikupära.

Kõiki kolme dimensiooni analüüsitakse uuringus. Kontekst analüüsi kasutatakse kolme riigi majandustingimuste võrdluseks, kus on kasutatud objektiivseid allikaid nagu *International Finance Corporation*, Maailma Pank ja Euroopa Komisjon. Kahte ülejäänud dimensiooni, raamistikku ja isikupära, analüüsitakse toetudes küsimustiku tulemustele.

2. **Konteksti** parameter käsitleb probleemi laiast vaatenurgast, mis koosneb neljast erinevast tasandist: uuringu asukohariik, probleemi sisu, otsuse langetamise tasand ja otsuse langetaja. Käesolevas uuringus on uuritud kolme riiki – Rootsi, Eesti ja Ukraina erinevast perspektiivist: üldised manaduslikud tingimused, ärikeskkond ja organisatsiooni kultuur.

Riikidevaheline analüüs viitab sellele, et Ukraina majandus on seotud kõrgete riskidega, peamiselt ebastabiilse poliitika, sotsiaalse ja manadusliku keskkonna pärast. Ukraina esindab üleminekumajandusega riiki, kus majandusüksused tegutsevad suure määramatuse tingimustes. Eesti majanduses esineb palju vähem riske võrreldes Ukrainaga, kuid Eesti majanduse avatuse pärast on see väga sõltuv välistrendidest, mis muudab majandusüksusi ülemääraselt kõrgete riskide aktsepteerimise suhtes ettevaatlikuks. Rootsi majandus on kolmest riigist enim arenenud ja riskidele vastupidav, mis on tugeva valitsuse positiooni, Rootsi ettevõtete kõrge konkurentsivõime ja märkimisväärsete finantsressursside kättesaadavuse tulemus. Rootsi majanduse riski tase on madal, kuid enamik ettevõtetest, mis tegutsevad rahvusvahelisel turul on sõltuvuses üldistest maailma majandustrendidest.

Rootsi organisatsioonid on Eesti ja Ukraina omadest enam liberaalsed. Nende organisatsiooni iseloomustab mõõdukas kontrolli süsteem ja võrdõiguslik/lame organisatsiooni struktuur, kus otsuseid võetakse vastu grupiti ja vastutus on jagatud võrdelt kõigi liikmete vahel. Eesti juhid on pigem ülesannetele orienteeritud ja keskenduvad isiklikule edule; nad käituvad reeglitele vastavalt ja sellega vähendavad määramatust. Ukraina organisatsioonid on kõige hierarhilisema struktuuriga, kus tippjuhid omavad otsustamisvõimu ja vastutavad erinevate valdkondade eest.

Riskid võivad esile tulla erinevates eluvaldkondades ja kaldumus võtta riske või nendest eemale hoida oleneb samuti proleemist enesest. Käesolev uuring keskendub ainult

majandusriskidele, mis on põhjuseks, et kõik küsimustikus esitatud küsimused väljendavad majanduslikke probleeme. Selleks, et koostada vastajatest terviklikum ja parem ülevaade uuriti nii isiklike kui ka ärivaldkonnaga seotud otsuseid.

3. **Raamistik** viitab probleemi kirjeldusele, mida otsuse langetaja peab lahendama ja mis on selles uuringus manipuleeritav tegur. Uuringus püstitati ja testiti 6 hüpoteesi paari, mis kajastavad erinevaid alternative. Tulemused näitavad, et probleemi raamistik mõjutab kolme riigi otsuse langetamist erineva jõuga.

Tulemused näitasid, et kui otsustusprobleem on esitatud majanduskasvu valguses, kus tulemuste ajalugu on hea ning esitletud positiivselt on juhid riskikartlikumad kui neutraalses majandustingimustes.

Vastavalt Shapira (1997), MacGrimmon ja Wehrung (1986), Bromiley (2001) uuringutega otsustati testida, kuidas üldine majanduslik situatsioon ja ettevõtte vahvute tulemuste ajalugu mõjutaksid juhtimisotsuseid. Senised tulemused on näidanud, et kui probleem on püstitatud majanduskasvu ja ettevõtte heade tulemustega ajaloo tingimustes ning on üldiselt positiivselt esitatud (võimalus teenida), kalduvad juhid võtma riskikartlikku otsust palju enam kui neutraalses majanduslikes tingimustes. Seega võeti vastu  $H_1^1$ : majanduskasvu ja ettevõtte heade tulemuste ajaloo tingimustes, juhid ei võtaks täiendavaid riske kui omavad võimalust ettevõtte lisaväärtuse loomiseks.

Seevastu Rootsi juhtide seas olid vastuse tulemused vastupidised ja kinnitasid autori eeldust et heades ja stabiilsetes majandustingimustes on juhid altimad võtma riske. Seda tulemust peab testima edaspidistes uuringutes, kuna vastajate hulk Rootsis ei olnud suur, mis ei luba pidada tulemust kinnitatuks.

Küsimused negatiivse sõnastusega (tekib kahjum) lisa informatsioon positiivsetest majanduslikest tingimustest ei ole mõjutanud juhtimisotsuseid ja seega tulemused lähtusid üldisest kalduvusest võtta riske kui ollakse kahjumlikus situatsioonis. Seepärast hüpotees  $H_0^2$  võeti vastu: Majanduskasvu ja ettevõtte heade tulemuste ajaloo tingimustes, teeksid juhid riskatse otsuse kui sesavad vastamisi ettevõtte väärtuse langusega.

Üldises majanduslanguse/kriisi ja ettevõtte negatiivsete tulemuste puhul käituvad juhid riskikarlikult, seega hüpotees võeti  $H_0^3$  vastu: Majanduslanguse/kriisi ja ettevõtte väärtuse languse tingimustes väldiksid juhid riske kui neil on võimalus tõsta ettevõtte väärtust, vaid hoopis valiksid kindla tulemusega alternatiivi.

Rootsi vastajate tulemused erinesid;  $H_0^3$  tingimustes enamik vastajaid valisid riskantse käitumise. Kuna vastajate arv Rootsis oli väike, ei saa pidada saadud tulemust kinnitatuks ja küsimus jääb avatuks tulevasteks diskussioonideks.

Uuringu tulemused kinnitasid Shapira ja March (1987), MacGrimmon ja Wehrungi (1986) tulemusi, et enamik juhte käituvad palju riskantsemalt juhul kui nende ettevõtte on ebaõnnestumas. Selle tulemusena,  $H_1^4$  võeti vastu: Majanduslanguse/kriisi ja halbade ettevõtte tulemuste ning väärtuse langemise tingimustes, oleksid juhid riskialtid kui seisavad vastamisi ettevõtte veelgi suurema väärtuse langusega.

Samas see hüpotees ei leidnud kinnitust Eesti vastajate seas. Tulemused näitasid, et majanduslanguse/kriisi tingimuste ja ettevõtte on juba kaotanud suure osa oma väärtusest, eelistaksid juhid olla riskikartlikud ja vältida riskantseid otsuseid, kaotades sellega kindla osa ettevõtte väärtusest. Seda erinevust võib seletada toetudes Eesti vastajate profiilile, kuna enamik juhte töötavad mikro ja väikese suurusega ettevõtetes, kus ettevõtte väärtuse langus võib lõppeda totaalse pankrotiga, samas kui Ukraina ettevõtete juhid näevad sarnaseid kaotusi suure ettevõtte perspektiivist kui kahjumit.

Uuringus oletatakse, et üldises majandusliku kriisi tingimustes, tiheda konkurentsi korral võrreldes neutraalsete majandustingimustega, oleksid juhid altimad katkestama ebaõnnestunud investeeringuid, See hüpotees leidis kinnitust Eesti ja Rootsi vastajate seas, ja seepärast nende riikide kohta võeti vastu hüpotees  $H_0$ . Ukraina vastajate hulgas oli tulemus hoopiski vastupidine, seepärast võeti vastu hüpotees  $H_1$ .

Katse 2.2 tulemused näitasid, et  $H_1^6$  peaks võetama vastu: Selleks, et otsustada ja eraldada projektile lisa vahendeid, nõuaksid juhid ettevõtte heade tulemuste korral projekti kõrgemat edukusnäitajat kui ettevõtte halvade tulemuste korral.

Üldiselt saadi uuringus tõendeid, et Ukraina juhtide käitumine, võrreldes eesti ja Rootsi juhtidega, langeb enam ekstreemsustesse - nende seas esineb keskmiselt riskantsem käitumine dramaatilistes tingimustes ja keskmiselt kõrgem riskikartlikus soosivates tingimustes. Eesti vastajate seas raamistiku tingimused mängisid vähem rolli ja nende vastused jagunesid mõõdukamalt.

4. **Isikupära** on väga kompleksne tegur mida võib käsitleda erinevatest vaatenurkadest arvestades: sotsiaaldemograafilised omadusi, isiku väärtushinnanguid ja eelistusi, eelnevaid kogemusi ja harjumusi standartsete situatsioonide lahendamisel. Töö lihtsustamiseks iga vastaja isikliku profiili kirjeldamise asemel loodi küsimustiku vastuste põhjal iga riigi keskmine juhi profiil.

Me tulemused viitavad sellele, et Ukraina ja Eesti juhid ei riskiks isikliku kapitaliga ja eelistaksid kindlaid investeerimisvõimalusi, nagu investeerimist kinnisvarasse; nad on enam keskendunud kiirekasvulistele võimalustele kui Rootsi kolleegid ja seepärast ka vähem kannatlikud. Kõigi kolme riigi juhid peavad investeerimist enda ärisse parimaks raha jaotamise viisiks – millest võib järeldada et kõigi vastajate enesehinnang on kõrge. Üldiselt on Ukraina juhid tuleviku suhtes kõige pessimistlikumad ja Rootsi juhid kõige optimistlikumad.

Töös käsitletud mudel ja küsimustik tõestasid võimekust uurida ja kirjledada riikidevahelisi erinevusi majandussubjektide riski käitumises. Uuringus saadud tulemusi saab täiendada kui lisada veel üks dimensioon – otsustaja valiku eelistuse tugevus/ulatus. Suurema hulga vastajate kaasamine annaks võimaluse hinnata selliste parameetrite nagu: kultuur, probleemi raamistik, isikupära ja riskikaldumus, mõju suurust Üks võimalikke ettepanekuid edaspidisteks uuringuteks on võrrelda finantsjuhtide riskikaldumust ja ettevõtete tulemuslikkust. Samuti oleks huvitav uurida riski-võtmise käitumuslikke muutusi üle pika aja.