

INVESTMENT RISK MANAGEMENT TECHNIQUES

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Abstract

The main aim of this paper is to analyse the process of risk management which nowadays is more attractive in business working. Risk management has many phases as identifying, measuring, controlling, insuring and minimizing the risk. This paper will include analysis of all these phases and analysis of the types of risks. Risk is an important component of every investment; thus, it is necessary to analyse it as both, the objective component of the investment, and as the subjective factor of the investment decision making. Risk management should be continual and developmental process oriented to accomplish the strategy of the business.

Keywords: risk management, risk, investment

Introduction

Investing, as a process, carries a significant level of risk. Investment activities are a sequence of effects for proper decision-making and decision-making, which, in turn, is a very sensitive process due to the influence of various environmental factors that increase the risk in business and that lead to crises. In addition, a whole range of diverse environmental factors influence the investment process. Risk, its types and sources of risk, as well as the impact on the flow and effects of investments have become one of the key issues in the analysis, evaluation and decision-making of any investment-related decision. The main reason for this is that each activity is characterized by a certain level of risk that to a greater or lesser extent affects the course and effect of the activity. A particularly interesting issue is the impact of certain types of risks on the course and effect of investment activities. Accordingly, risk management has been one of the central themes of financial management in the last decade.

Risk management is the basis for making investment decisions and assessing the expected effects of investing. Risk, as a term, in a broader sense, includes other types of risks such as: credit risk, market risk, liquidity risk and operational risk. These types of risks are the basis of the investment process.

Literature review

A company must invest to be able to develop and stay in the competitive market. Today's investment decision issue is discussed and dealt with by international institutions like World Bank, European Commission, European Bank for Reconstruction and Development and others. They are the ones who formulate some specific methodologies to manage investment decisions (Avram et al., 2009). Decision making is a daily phenomenon in the life of either the individual or corporate organisation, a course of action can seldom be judged alone because virtually every decision must be geared to other plans (Alao et al., 2012). Since decision making relates to the future events, risks and uncertainty could be involved. Lazarte & Tranchard (2011)

defined risk as 'the effect of uncertainty on objectives. According to Pandey (2009), risk is the variability that is likely to occur in the future returns of a project. Chavas (2004) defines risk as the representation of any situation, where some events are not known with certainty ahead of time. This suggests that time is a fundamental characteristic of risk, but through learning some information that is not known now, it can be known in the future; therefore, risk has a temporal dimension. (Chavas 2004)

The field of economics analyses risk from the perspective of the decision maker, how they make their decisions in the absence of perfect information. In understanding and studying risk, the theory and the empirical analysis must be combined. Pure theory may have some deficiencies and the empirical analysis by itself might be constrained and might stay primitive. Combining theory with practice helps define the strengths and limitations of the theory. In this way, theories can be refined and can help in a better understanding of risks.

According to Eeckhoudt et al. (2005) risk means to be sensitive to new information arrivals.

Influence of different types of risk in business decision making

Risk implies a degree of uncertainty and inability to fully control the results or consequences of such action. Effective risk management requires an assessment of its subsequent impact on the decision-making process. The decision-making process enables decision-making to evaluate alternative strategies before any decisions are made. The process includes:

1. defining the problem and all practical feasible alternatives,
2. discussion of the results based on their net profit in terms of assets and time,
3. different uncertainties are measured in terms of probability,
4. The quality of the optimal strategy depends on the quality of the evaluations, whereby the decision-making process should identify and examine the sensitivity of the optimal strategy in relation to the key factors.

Whenever the manager has some knowledge, there is a possibility to make a subjective assessment, i.e., to make a subjective decision. In such cases, however, the problem is classified as risky decision making.

Hence, a difference should always be made in the decision-making process, i.e., there is a difference in the decisions made that are only likely to be realized in relation to those obtained with a certain certainty. Reliability contributes to risk aversion in cases involving certain gains, while companies do not risk in cases involving certain losses. In addition, investors generally reject components that are common to all items under consideration. This tendency is called the isolation effect and leads to the same choice, which is presented in different forms. In the alternative theory for choosing a certain value, the profit and the loss are assigned, instead of the final means, and there the probabilities are replaced with certain weights. Value function is normally concave for gains, usually convex for losses, and generally faster for losses than for gains.

In many situations, managers have an idea of the probability that a certain decision will be realized. These probabilities can be overestimated based on the opinion of the manager, based on the results of the observed markets, based on the expectations of the experts and so on. When the probabilities of certain results are determined, then the decision-making process takes place in conditions of existence or non-existence of risk. The most used risk-taking decision-making techniques are based on determining the expected cost-effectiveness, expected opportunity costs, or expected value of the best information.

In the decision-making process, in the presence of risk, the manager is always guided by the expected profitability, where first the probabilities with which certain results will be achieved are determined, then based on the previously determined profitability the mathematical expectation or average profitability is determined for each alternative longer period.

There are many classifications of the risks made by divers' criteria. But risks usually are divided on two basic types:

- Systematic Risk - In systematic risk interlace various external effects of success of investment

challenge, from where socio-economic and political goings-on can be distinguished as well as the general market movements.

- Unsystematic Risk - While non-systemic risk includes those changes that haven't got prevalent dimension and don't influence to each investment, but also should be analysed for each investment. According to this division following types of risks can be distinguished: credit risk, liquidity risk, capital price list, currency risk, and country risk. (Cvetkovic, 2002, p.284-287)
- Credit risk could be defined as a risk which is appearing when the receivables could not be realised promptly. The bank institutions as institutions which allow many loans are usually subject to credit risk. Loans are the largest and the most obvious source of credit risk; however, other sources of credit risk exist throughout the activities of a bank, including in the banking book and in the trading book, and both on and off the balance sheet. Banks are increasingly facing credit risk (or counterparty risk) in various financial instruments other than loans, including acceptances, interbank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options, and in the extension of commitments and guarantees, and the settlement of transactions (Principles for management of the credit risk, 1999). In theory and practice credit risk can be defined as short- term or long-term credit risk. This classification depends on the type of disposal. Every individual disposal should be analysed as individual risk.
- Liquidity risk is the current and prospective risk to earnings or capital arising from a bank's inability to meet its obligations when they come due without incurring unacceptable losses. Liquidity risk includes the inability to manage unplanned decreases or changes in funding sources. Liquidity risk also arises from the failure to recognize or address changes in market conditions that affect the ability to liquidate assets quickly and with minimal loss in value (www.bankersonline.com)
- Currency risk is typical for companies that realize transactions with foreign companies. Currency risk can dramatically affect to the returns, ranging from magnifying the gains to turning gains into losses in your own currency. The basic rule is: (www.monevator.com)
 - When the foreign currency strengthens versus your own currency, your overall return goes up
 - When the foreign currency weakens versus your own currency, your overall return goes down

On currency market there are many risks during the trading: delivery risk, credit risk, position risk, gapping risk, capital value risk (www.businessdictionary.com)

Country risk is the risk that economic, social, and political conditions and events in a foreign country will affect in doing business.

Risk management process of country risk includes:

- Oversight by the board of directors.
- Written risk management policies and procedures.
- A system for reporting country exposures.
- A process for analysing country risks.
- A country risk rating system.
- Country exposure limits.
- Monitoring of country conditions.
- Stress testing and integrated scenario planning; and
- Internal controls and audit function (www.occ.treas.gov).

The other risks which are important for doing business for making investment decision in way to improve the organizations performances are: (www.typesrisk)

- Inflation Risk: The risk that the rising costs of inflation will outpace the growth of your investment over time.
- Company Risk: This is the risk that the individual company in which you invest will fail to perform

as expected.

- Legislative Risk: Whatever laws the government passes today may be extinct tomorrow. For example, the long-term capital gains tax rate has been changed five times in the last 20 years, with the most recent cut at 20%. Factors such as tax deduction and deferral should never be your sole reason for selecting an investment. These perks are at the mercy of Congress.
- Global Risk: It's always a bigger risk to invest overseas than at home. Then again, it's generally more rewarding to vacation in Europe than lounging around in the backyard. Over 50% of the world's capital market opportunities exist outside of the U.S., so a purely domestic strategy can severely limit your long-term earnings potential.
- Timing Risk: Timing risk works two ways. First, you run the risk of investing a large sum of money when share prices hit their peak. Second, there's the risk that you'll need to access your money to pay for retirement or college expenses during a temporary market setback--causing you to lose money on your investment.

All organizations should have own strategy for managing with risk in the process of making investment decision.

The concept of risk management

Risk management is usually defined as a process of analysing exposure to risk and determining how to best handle such exposure. Risk management includes policies, procedures, and practices involved in identification, analysis, assessment, control, and avoidance, minimization, or elimination of unacceptable risks. In the following content first, we should analyse and define risk and then the phases that a part of risk management. Risk is possibility of loss, injury, disadvantage or destruction. Risk is a measure of probability and consequence of not achieving project goal. Most people agree that risk involves the notion of uncertainty. (Kerzner, 2003) Risk is defined as a chance that an investment's actual return will be different than expected. This includes the possibility of losing some or all the original investment (www.investopedia.com).

The main goal of risk management is maximizing incomes and minimizing the potential risk. Risk management includes several related actions involving risk: planning, assessment (identification and analysis), handling and monitoring.

Risk planning is the process of developing interactive strategy and methods for identifying and analysing risk issues, developing plans for handling with risk and monitoring how risk have changed. The important output of risk planning is the risk management plan. At the begging of the project, project team maintain a meeting with one important goal – to develop plan for risk management.

The risk plan management process (RMP) is the risk – related roadmap that tells the project team how to get from where the program is today to where the program manager wants it to be in the future. The key to writing a good RMP is to provide the necessary information, so the program team knows the objectives, goals, and techniques of the risk management process: reporting, documentation and communication; organizational roles and responsibilities; and behavioural climate for achieving effective risk management. Since it is a roadmap, it may be specific in some areas, such as the assignment of responsibilities for project personnel and definitions, and general in other areas to allow users to choose the most efficient way to proceed. (Kerzner, 2003). Another aspect of risk planning is providing risk management training to project personnel. The training can be performing by individuals, whether inside or outside the project with experience in making risk management work on project.

The phase of risk assessment includes identification and analyses of risk. The result of this phase is a key input to many subsequent risk management actions. This phase is very difficult and time – consuming part of the risk management process. Risk assessment has a large impact on project outcomes. The goal of risk identification is to identify all potential risk issues. The important techniques for assessing the risk are:

- Brainstorming is a technique which is used for finding solutions for the problems which has happened spontaneously.
- A Delphi technique is an interactive procedure which is based on known and unknown inputs which relate to actions in the future. The data are collected by experts, and they give hypothesis about future development.
- The interview is a technique for collecting data in direct speech with employ or managers.
- SWOT analysis is a technique that undertakes into account strengths, weaknesses, opportunities and threats, adjacent to playing great role in strategic planning it is also used for identification of potential risks of the project.

A lot of techniques and methods are used during the risk analysing. For example, tree decision and simulation which are used for quantitative analyse.

After the identification risk can be ranges as:

- high risk: substantial impact on cost, schedule or technical.
- medium risk: some impact on cost, schedule or technical.
- low risk: minimal impact on cost, schedule or technical

These terms for rating the risk are relative terms. A risk viewed as easily manageable by some managers may be considered hard to manage by less experienced or less knowledgeable managers.

Risk management techniques

Risk assessment techniques are procedures that measure the size of the risk that may cause a certain loss and, on the other hand, allow the risk to influence to the investment project. The assessment of the size of the risk, above all, depends on: (Najt, 1994)

- project flexibility (flexible investment - higher risk, inflexibility - lower risk).
- the application of techniques (new technique - higher risk, old technique - lower risk) and
- project size (large project - higher risk, small project - low risk)

There are many options that a project manager should consider getting the right response. Namely, if there is a classic negative risk, then some of the following risk management responses should be used: (<http://tenstep.com.hr>)

- ❖ acceptance. The project manager monitors the high risk and decides not to take any action. This can happen if one of the two reasons occurs, i.e.:

The project manager may feel the need to manage risk, but the costs and commitment to risk management are greater than the risk event itself. In this case, most of the problems arise around the costs of reporting the risk rather than the costs of managing the risk. The risk event has a certain probability of occurrence, which means that it is possible that the event does not occur in any case.

- there are no available and acceptable risk management activities. This is different from the previous reasons, when the costs are higher than the profits. In this case there is no practical way to manage the risk, even if it is identified as high risk.
- ❖ observation. The project manager does not proactively manage the risk but monitors it to see if it is more or less likely that it will occur as time goes on. If it is realized, over time, that its occurrence is probable, then different answers will be formed late. This is a good approach if the risks to be managed are identified but the risk event is far in the future. Another reason for risk monitoring is if the probability of risk is very low. Instead of setting up a plan right away, the project manager creates a plan only if the risk seems likely to occur. The disadvantage of this approach is the delay in resolving the risk, which shows that it will be difficult to manage in the future.
- ❖ avoidance. Avoiding risk means that the conditions that cause the problem are eliminated. For

example, if part of a project is thought to be associated with high risk, that part of the project may be removed. This is a very effective way to eliminate risk, but obviously can only be used in certain unique circumstances.

- ❖ switching. In some cases, risk management responsibility can be removed from the project by transferring the risk to another party. For example, the risk associated with new technology can be identified. Giving functions to a third party can eliminate this risk for the project team. The risky event is still present, but now someone else is dealing with it and he is trying to solve it.
- ❖ mitigation. In most cases this is a timely approach. Risk mitigation means establishing a set of proactive steps to ensure it does not occur. Another goal of risk mitigation is to minimize its negative impacts. In many cases it is not possible to eliminate the risk event, but as there is time to prepare, the likelihood of the event occurring should be minimized or the impact on the project should be minimized if the risk event occurs.

The selection of an appropriate strategy includes the full monitoring of the project risk and the constant adjustment of the planned reactions during the full realization of the project. Reaction planning schedules the various strategies for dealing with risk and uncertainty, such as previously stated risk ignorance, risk reduction, and so on. However, in addition to the application of individual strategies, simulations exist and are used when it is necessary to combine most strategies. These are complex situations when, through a combination of risk and its different impacts, they require combinations of multiple strategies to respond to different events in the project risk management process. This means that it is necessary to have an organized system of reactions, whose task is to monitor the implementation of the project and permanently change and adjust the planned actions and strategies. (http://www.ef.uns.ac.rs/Download/menadzment_rizikom_master/2009-11-05_teorija_rizika.pdf)

Conclusion

The stated techniques in risk management are realistic and acceptable, but a special problem is the choice of the appropriate risk management strategy. Which strategy should be applied in each situation mainly depends on several factors, and especially on the type and nature of risky events, the probability of their occurrence and the degree of impact. Therefore, in specific situations, it is necessary to analyse it in detail and based on the results to choose the best strategy.

The best way is to implement the risk management process to apply a combination of multiple strategies to respond to project risk events, and thus to ensure a complete risk monitoring and control process. Also, the organizations should compose sector or commission for management with risk in the process of making investment decision.

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