

IDENTIFICATION OF RISK FACTORS AS AN ELEMENT OF THE PROCESS OF RISK MANAGEMENT IN THE REAL ESTATE MARKET

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Abstract: This study presents the systematic of the types of investment risk in the real estate market and its characteristics. Furthermore, the study compares the risk components with the forms of investing, particularly in terms of real estate market.

The comparison of different classifications of risks presented by various authors shows that the two main categories of risk are macroeconomic risk and microeconomic risk.

Approaching developers as a typical example of investors in real estate market allowed for presentation of risk factors in investment and construction activities of developers, types of risk, areas of risk control and methods that minimize risk and risk management. It was demonstrated that risk factors are the fundamental elements in the process of risk management in the estate market.

Key words: risk, investments in real estate, risk management.

Introduction

In ISO/FDIS 31000 [8] standards, risk is defined as: “effect of uncertainty on the achieved goals. The effect is deviation from expectations, either positive or negative. The goals can have a variety of aspects e.g. financial, health protection, environmental protection and other. They might exist at different levels e.g. project, organization, product and process”.

Jajuga [10] considers the two concepts of risk: negative risk and neutral risk. The negative concept of risk approaches the risk as a threat in the form of loss or impossibility of achievement of a particular goal. In the neutral concept, risk is a threat on the one hand and an opportunity on the other. With the neutral approach, risk means the opportunity of achievement of the effect that differs from the expected one.

Therefore, risk is a set of measurable future results of a particular activity i.e. a set of known probabilities, whereas uncertainty relates to what can be known since it is to some extent unpredictable and thus not quantifiable. Uncertainty cannot be viewed as a countable element such as chance or probability since it describes a degree of knowledge or the lack of this knowledge. This differentiation was developed by Meldrum [12], who pointed to the continuum between the 'pure risk' and 'pure uncertainty'. This author emphasized the difference between the events that occur sufficiently often and allow for statistical function in the analysis of probability and events that do not meet these requirements.

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Making investment decisions is associated with high risk. This causes the necessity of risk management by an investor. Variability of the environment necessitates adaptive processes that consist in taking measures to limit threats or aimed at using the opportunities in foreign markets. Jajuga emphasizes that risk management means “making decisions and taking actions in order to achieve the acceptable risk level”.

Risk of financing of the investment activities in the real estate market

In the real estate market, the investment decisions are characterized by a relatively greater risk connected with long period of implementation of the investment and a variety of types of real estate which adds uniqueness to each investment project. A particular time must elapse from the moment when the investment decision is made until it is implemented, with investment conditions that might change for multiple times. The sector of real estate financing, particularly due to high capital intensity, is often forced to finance investments for decades, which necessitates continuous monitoring of market and possibly best determination (recognition of the source) of risks involved in this financing. The systematic of the risks was presented in Fig. 1.

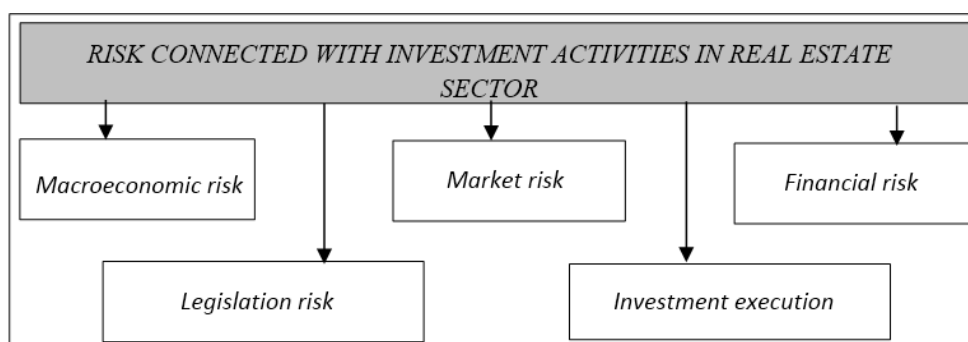


Figure 1. Types of investment risks in real estate market

Source: Author's own elaboration based on: W.A. Werner, *Ryzyko polskiego dewelopera, Budownictwo Polskie, marzec 2001, pp.75-76*; K. Czerkas, *Ryzyko w kredytach hipotecznych. Wymagania banków, „Prawo Bankowe” 2003, No. 6 (70), pp. 79-83*; K. Czerkas, *Ryzyko banku w finansowaniu projektów mieszkaniowych, „Finansowanie Nieruchomości” 2007, No 2(11), pp. 49-56*; K. Jajuga, *Modele ryzyka kredytowego kredyty hipoteczne, „Finansowanie Nieruchomości” 2004, No. 1(1), pp. 22*

Continuous control and forecasts that concern formation of a variety of macroeconomic conditions in the environment of the business entity that implements an investment project, allows for identification of the factors of macroeconomic risk and forecasting of the most likely future. Changes in economic policy, prices, exchange rates, legal regulations, taxes and tax allowances, resources and needs of the customers, interest rates on bank deposits and credits are the determinants of the changes in the environment and are very

important sources of macroeconomic risk in investments in the real estate market. These macroeconomic variables and VAT rates for construction materials stimulate the demand and supply in the real estate market.

Market risk relates to the risk connected with changes in the market. With respect to the real estate market, the factors in market risk are mainly the changes in the prices of real estate which result from demand and supply (e.g. effect of cycles on the real estate market, its location, standards and activities of competitors). However, since the most important economic markets are the markets of residential real estate, lands for construction and commercial buildings while investments in the real estate necessitate a long-term involvement of considerable finance (high capital intensity), these markets are characterized by a strong relationships with the financial system, including banking (high concentration of banking activities) [3].

Financial risk includes several subcategories (partial risks). From the standpoint of financing the real estate, with particular focus on mortgage crediting in the real estate market, the most proper risk classification was presented by Jajuga [9]. According to this author, the fundamental types of risk in the market of mortgages are:

- credit risk
- interest rate risk
- foreign exchange rate risk
- risk of prices of real estate
- liquidity risk.

Changes in the legal environment are the factors which represent the sources of legislative risk in the real estate market [5]. The changes, or the lack or changes, in the plans of land development, transformations in administrative division and regulations concerning environmental protection should also be taken into Consideration [13]. The most important factors in legislation risk include the system of land and mortgage register and non-regulated property rights. Implementation of an information system to the system of land and mortgage register which ensures the speed and credibility of registration of rights to real estate, considerably minimizes the legislation risk factors, thus increasing the safety barriers.

The risk of investment implementation results from disturbances that occur during implementation of a particular project. Werner [15] lists the following factors that affect risk connected with investment activity in the real estate market:

- technical disturbances in the investment process,
- formal difficulties connected with documentation, such as project errors (spatial solutions such as distance, isolation, fire-fighting regulations), geological problems, environmental protection. They often cause that the time of implementation of a project is elongated, while the costs of construction increase, followed by the higher contractual penalty fees.

The presented classification of risks in the real estate market reveals that the listed factors that affect individual categories of risk are interrelated. Therefore, they can

be subordinated to several categories (e.g. currency exchange rate: according to Czerkas [4] represents a factor of macroeconomic and financial risk; Jajuga [9], Bryx and Matkowski [2] emphasize this factor in the case of banking risk (the risk in mortgage crediting).

The increased investment in real estate is connected with long-term involvement of considerable financial resources, thus affecting uncertainty and risk. One of the most important problems of investment in the real estate market is proper assessment of risk, its evaluation and effective management.

With respect to classifications of risks proposed by a variety of authors, with particular focus on those in the area of financing real estate market, it should be emphasized that the two main risk categories in the process of financing investments in the real estate market are macroeconomic and microeconomic risks, which are often termed specific risks [6].

Systematic risk, also termed market risk, results from the effect of macroeconomic factors which are common to all instruments present in a particular market. This risk cannot be diversified and cannot be limited by inclusion of more instruments to the investment portfolio (in a particular market). It is estimated that investment in the stock market involves a systematic risk that accounts for 25-50% of total risk [16]. The non-systematic risk results from the effect of microeconomic factors, specific for a particular instrument. This risk can be diversified, while an investor might limit or eliminate this type of risk through inclusion of other instruments in the portfolio.

The most essential risk that dominated the processes of investments in the real estate market is market risk, liquidity risk, bankruptcy risk and inflation risk. Comparison of the investment risk in real estate market with the risk of other forms of investments is presented in Table 1.

As results from the Table 1, real estate, compared to the risk in other types of instruments, is characterized by high liquidity risk. The risk of losing revenues is also very high, particularly for the property without buildings. The risk of time should also be emphasized: it is one of the most essential risk factors in the investment process in construction sector. Due to the high percentage of foreign capitals in the most of investments, exceeding the planned periods of implementation and/or exposition in the market is connected with additional load due to loan servicing, which might consume the assumed investor's profits.

The realization of the time risk might be affected by external factor (independent of the investors) and e.g. extensively long time of waiting for obtaining the permissions and the internal factors (that depend on the investor) and bad organization of work of a developer's team. This means that another risk, which is the risk of elongation of the period of allowances and permissions is strongly correlated with the time risk.

Table 1. Comparison of the investment risk for different forms of investments. Scale from 0 to 10 (max. risk).

Components risks	Forms of investments							
	Cash	Term deposits	Insurance policies	Securities in the enterprise	Own enterprise	Actions	Real Estate building	Property without building
Loss of capital	2	2	2	4	9	7	3	3
Loss of revenues	10	2	4	3	4	7	4	9
Interest rate	2	4	4	8	4	4	3	2
Purchasing power	10	7	7	4	4	5	2	2
Management	1	2	3	6	10	5	6	4
Time	2	2	3	6	4	7	4	6
Liquidity	1	4	4	6	6	3	7	7

Source: M.A. Wiśniewska, *Inwestowanie w nieruchomości na rynkach międzynarodowych*, Wydawnictwo Naukowe PWN, Warsaw 2011, pp. 42-72, 203; <http://www.twoja-firma.pl/wiadomosc/16817856jak-ryzykowne-sq-inwestycje-w-nieruchomosci.htr>, Access on: 22.04.2012

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K. Marcinek [11] argues that the risk of implementation of construction initiatives is considerably affected by such factors as exceeding the costs of construction and elongation of the time of development of the project according to the customer's requirements. However, the Jajuga's classification of risk [9] seems to be the most adequate in the case of mortgage crediting in the real estate market. Fundamental

types of risk in the mortgage market are credit risk, interest rate risk, foreign exchange risk, risk of prices of real estate and risk of liquidity.

Analysis of the risk categories presented with respect to the real estate market demonstrates that the factors that impact on individual risk categories are interrelated. They can be subordinated to several categories (e.g. currency exchange rate: according to Czerkas [4] represents a factor of macroeconomic and financial risk; Jajuga [9], Bryx and Matkowski [2] emphasize this factor in the case of banking risk (the risk inherent in mortgage crediting). With respect to different classifications of risks presented by various authors, it should be emphasized that the two main categories of risk that exists in the process of financing the investments in real estate sector are macroeconomic risk, which is the result of activity of the whole market or economy and independent of the implementation of a particular investment, and microeconomic (specific [14]) risk, characteristic of a particular investment project.

Determinants of risk as an element of the process of risk management in the real estate market

Assessment and evaluation of different risk factors in investment projects in the area of real estate is of essential importance to proper risk management in respect to a particular investment project by an investor and financial institutions (creditors). Risk management described in ISO/FDIS 31 000 standards encompasses identification, analysis, evaluation and approach to the risk i.e. activities that minimize, limit and prevent adverse effects of risk [8]. The risk factors, types of risk and activities that minimize risk of the developer's projects are presented in Table 2.

Table 2. The risk factors, types of risk and activities that minimize risk of the investments projects in the sector of residential real estate construction (to the developer)

Criterion as a risk factor	Areas of control of the risk	Type of risk	Methods of minimization and risk management
1	2	3	4
Location	<ul style="list-style-type: none"> - Economic activity in the city and region. - Status of the location in the spatial development plan - Status of the location in attractiveness rankings - Success of competitive projects 	Macroeconomic risk and Market risk	<ul style="list-style-type: none"> - Verification of the land development plan and attractiveness rankings - Assessment of the competitive projects by the bank in terms of progress and terms offered to purchasers - Requirement of advance sale in the credit contract as a test of market attractiveness of the project

1	2	3	4
Financial liquidity of a participant in the construction and investment market (developer)	<ul style="list-style-type: none"> - Financial flow - Level, form and time of contribution with internal resources - Financial continuity of the project 	Financial risk	<ul style="list-style-type: none"> - Analysis of feasibility of the project and financial flow - Definition of the level contribution of internal resources negotiated with the bank as a precondition for first tranche's payment - Presence of credit contracts and loans involved in the project
Financial strength of the developer and their capital group	<ul style="list-style-type: none"> - Financial standing of shareholders who should be able to finance the part of the project - Analysis of reputation of shareholder - Contracts of financial support for the projects by shareholders - Analysis of involvement of shareholder in other investment projects 	Market risk	<ul style="list-style-type: none"> - Analysis of financial report, possibly soon after the shareholders' audit - Analysis of bank opinions and reports from credit information agency - Presence of contracts of financial support for the project by the shareholders
The developer's project risk management	<ul style="list-style-type: none"> - Comprehensive feasibility study for the project - Adaptation of project documents to current market demands - Mode of selection of executors and contractors (competitive prices, reputation, experience in implementation of similar projects) - Constant price for execution of works - Participation of experienced persons in projects management-from developer - Formulation of implementation contracts to secure the developer's interest, but consistent with legal regulations. 	Macroeconomic risk of investment implementation Marketing Risk and Financial risk	<ul style="list-style-type: none"> - Feasibility analysis and the analysis of the contracts involved in the projects: employing the external companies - Analysis of tender procedures when choosing contractors and partners - Analysis, by the financing bank, of the contracts that are involved in the project (e.g. general contractor agreements, contract guarantees, insurance policies, implementation contracts). - Using the mortgages by purchasers of flats, houses or buildings, which confirms their credibility and ensured the continuity of sales and profits

Source: K. Czerkas, *Ryzyko bankowe w finansowaniu projektów mieszkaniowych*, „Bank i Kredyt”, lipiec 2004; „Finansowanie Nieruchomości” 2007, No. 2(11); I. Grodzka, *Ryzyko w działalności deweloperskiej*, „Obrót Nieruchomościami” 2001, No. 7(35); A. Bechciński, *Ryzyko działalności deweloperskiej*, *Bankier.pl*, <http://www.bankier.pl>, Access on 23.08.2011

Overall evaluation of risk of the investment projects implemented by a developer consists in percentage classification of factors of microeconomic risk: the higher the ranking, the better the assessment [16]. Then, a creditor determines, for each microeconomic risk factor, the representative weights for risk toleration in a particular financial institution. The rankings prepared by an entity that makes a decision on crediting and weights used by a crediting institutions are used for risk evaluation.

Analysis of individual assessments of risk provides a general risk assessment, while the entity that credits developer's activities determines the acceptable level of general risk.

Individual elements of risk are also assigned some probabilities of occurrence (typically on a scale of 1 to 10) and weights (importance to the investor e.g. on a scale of 1 to 5). The product of those two values provides a measure of threat, i.e. represents the magnitude of the evaluated risk. The obtained measures of investment risk in real estate market point to the specific nature of investments in real estate compared to other alternative forms of investments. Analysis of risk utilises statistical methods based on probability theory, which are a key quantitative measure connected with a variety of techniques of investment risk assessment.

Analysis of risk, through determination of weights of individual factors and measures, allows for taking actions to minimize these threats through adequate risk management.

Summary

Presentation of the systematic of investment risk in the real estate market and their characteristics allowed for comparison of this risk with the risk in other forms of investing. Analysis of the risk categories presented with respect to the real estate market demonstrates that the factors that impact on individual risk categories are interrelated.

The comparison of different classifications of risks presented by various authors shows that the two main categories of risk that exists in the process of financing the investments in real estate sector are macroeconomic risk, which is the result of activity of the whole market or economy or microeconomic risk, characteristic of a particular investment project.

The risk factors in investment and construction activities of developers, types of risk, areas of risk control and methods that minimize risk and risk management were presented. It was demonstrated that risk factors are the fundamental elements in the process of risk management in the estate market.

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IDENTYFIKACJA CZYNNIKÓW RYZYKA JAKO ELEMENT PROCESU ZARZĄDZANIA RYZYKIEM NA RYNKU NIERUCHOMOŚCI

Streszczenie: W artykule przedstawiono systematyczne ujęcie rodzajów ryzyka inwestycyjnego na rynku nieruchomości i jego cechy charakterystyczne. Dodatkowo, badanie porównuje elementy ryzyka w połączeniu z formami inwestowania, przede wszystkim w warunkach realnego rynku nieruchomości.

Porównanie różnych klasyfikacji ryzyka, prezentowanych przez różnych autorów, pokazuje że dwie główne kategorie ryzyka to ryzyko makroekonomiczne i ryzyko mikroekonomiczne.

Podejście deweloperów jest typowym przykładem inwestycji na rynku nieruchomości, umożliwiając przedstawienie czynników ryzyka inwestycji i budowaniu działalności deweloperów, rodzajów ryzyka, obszarów ryzyka kontroli i metod które minimalizują ryzyko i zarządzanie ryzykiem. Wykazano że czynniki ryzyka stanowią fundamentalne elementy w procesie zarządzania ryzykiem na rynku nieruchomości.

Słowa kluczowe: ryzyko, inwestycje na rynku nieruchomości, zarządzanie ryzykiem

作為一個元素的過程中的風險管理在房地產市場的風險因素識別

摘要：本研究提出的系統類型的投資風險在房地產市場及其特點。此外，該研究比較的風險組件形式的投資，特別是在房地產市場。

不同由不同的作者提出的風險分類的比較顯示，兩個主要類別的風險是宏觀經濟風險和微觀風險。

接近開發商在房地產市場的投資者介紹投資和建設活動的開發商，風險類型，風險控制的領域和方法，最大限度地減少風險和風險管理風險因素允許作為一個典型的例子。它表明，風險因素是房地產市場在風險管理過程中的基本要素