

THE TYPES AND THE ASSESSMENT OF FINANCIAL RISKS IN PROJECT-ORIENTED ORGANISATIONS¹

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ABSTRACT

The principal aim of the study is to present and assess how financial risks can be defined in the case of mainly project-oriented businesses operating in the real economy and through what methodological approach they can be identified. Although the answer seems to be evident at first, as a result of our exploratory research summarised in this study, we came to the conclusion that there was no generally accepted conceptual and methodological framework in terms of financial risks. In the light of this, based on the overview, we identified certain key issues which allow us to apply a uniform and coherent risk management approach in this respect. Such key issues include the effect of financial risks on the change in equity, the financial assets and liabilities and the cash flow of the company (through the change in profitability), as well as the change of the critical path of the project in the case of limited financing.

JEL-codes: G32, M10

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1. THE ROLE OF THE MANAGEMENT OF FINANCIAL RISKS IN CORPORATE DECISION-MAKING

The management of financial risks is gaining more importance in corporate decision-making, especially in the light of the global financial and economic crisis of 2007–2008. In the case of an enterprise or a project-oriented organisation, the definition and management of financial risks requires special attention and sophisticated methodological approach among potential risks (however they are classified). If we accept the reasoning according to which risks should be identified (classified) based on what corporate (project) objectives they influence and how they influence them, the company's financial objectives may override any other criteria in the long run (as the long-term maximisation of the value of the company is the most accepted "ultimate goal"). In other words, the management of

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financial risks becomes a priority because of other “subordinate” financial risks, and the management of all risks has an indirect effect on the management of financial risks (therefore, financial risk management functions as an instrument as well as an objective). In view of the above, it is important to separate the roles of cause and effect and abolish redundancies in the applied theoretical model.

Despite being apparent, the automatic delegation of such decisions to company level is not necessarily well-founded. As an alternative solution, the owners of a business can manage risks at an individual level, according to their own risk preferences and by the available means. As the long-term objective of a profit-oriented business should be the maximisation of shareholder value, the decision between company-level and individual-level risk management should be examined in the light of compliance with this criterion. Furthermore, regarding risks, financial risk is not only a type of risk, but it is also a criterion affecting the decision between the examined implementation alternatives. To explain further, it means that depending on whether risks are managed at company or individual level, exposure to financial risk may increase or decrease.

Smith and *Stulz* (1985) argue for company-level management of financial risks, claiming that due to the coverage, the corporate tax to be paid by the company may decrease, which may increase the value of the company, in comparison with the costs of coverage. According to *Dufey* and *Strinivasulu* (1984), in the case of company-level risk management, the transaction costs of coverage can be lower than in the case of individual- (owner-) level risk management. The relative “efficiency” of company-level risk management is supported by the “information asymmetry” between the owners and the management, based on which the management has more and more accurate information about the operation of the business (and about risk perception) (*Stulz*, 1984).

As it was mentioned above, several theories connect decisions on the relevant “level” of risk management to the consideration of financial risks posed by the individual alternatives (and the exposure to such risks). Among financial risks, definitely funding risks play a key role here. The logical reasoning behind the theories often refers back to various theories on corporate capital structure (or shows significant parallelism with them). *Smith* and *Stulz* (1985) and indirectly *Lessard* (1990) primarily refer to the costs arising from financial difficulties when they mention financial transaction costs. An increase in the expected costs of financial difficulties may lead to the deterioration of the creditworthiness of the business, an increase in the capital costs of the company, limited access to sources of funding or in other words, an increase in funding risk. The table prepared by *Dömötör* (2014, see: *Table 1*) provides an excellent summary of the logical system of interrelations between the company-level management of financial risks, as well as the theoretical models and approaches related to them. As the study does

not aim to examine risk management at system level, in a complex manner, I will not describe the characteristics of the individual theories in detail. At the same time, I believe that this approach is worth presenting, mainly because of the (“circular”) system of interrelations with financial risks.

Table 1
Theoretical explanations of corporate risk management

Risk management does not create any values at company level		<i>Miller and Modigliani (1958, 1963)</i>	
Explanations of corporate risk management	Value creation of coverage owing to market imperfections	Taxes	Smith and Stulz (1985)
		Financing	<i>Myers (1984)</i>
			Smith and Stulz (1985)
			Lessard (1990) <i>Froot et al. (1993)</i> <i>Tirole (2006)</i>
	Explanations of coverage promotion	Transaction costs	<i>Dufey and Srinivasulu (1984)</i>
		Information asymmetry	<i>Tirole (2006)</i>
		Manager incentives	Smith and Stulz (1985) Stulz (1984) <i>Breeden and Viswanathan (1990)</i> <i>Duffie (1992)</i> <i>Tufano (1996)</i>
		Irrational explanations	<i>Michenaud and Solnik (2008)</i>

2. DEFINITION OF FINANCIAL RISK

I have not found any clear and dominant approach to the definition of the term 'financial risk' while researching the literature on the topic. In the case of financial institutions, financial risks can be classified and risk exposure can be measured relatively exactly due to the relevant strict national and international regulations, while, in the case of non-financial enterprises, this is not evident at all. In my view, in the case of non-financial enterprises, it is only slightly possible to agree on the concepts applied in the two sectors and use the terminology of the financial sector. In the following part of my study, I will outline the conceptual and logical framework of non-financial enterprises which can be found in literature, presenting the possibilities of the interpretation of financial risks.

According to *Illés* (2009), financial risk refers to the volatility of the earnings after taxes of an enterprise and increases the insolvency of a company. In her opinion, the degree of financial risk depends on the financial leverage of a company, resulting from the use of fixed-cost sources of funding.

According to *Pálinkás* (2011), financial risk deals with the funding side of an enterprise. Difficulties arising from the change in the interest rates of loans or the lack of cash, as well as exchange rate risk belong to this category.

Table 2
Categorisation of financial risks - overview

	Market risk	Credit risk	Liquidity risk	Operational risk	Interest rate risk	Exchange rate risk	Basic commodity price risk	Solvency risk	Funding risk	Pricing risk	Asset risk
<i>Maverick</i> (2015)	x	x	x	x							
<i>Pálinkás</i> (2011)			x ²			x					
<i>Ennouri</i> (2013)	x	x									
<i>Napp</i> (2011)			x		x	x	x	x	x		
<i>Hoffmann</i> (2017)					x	x	x				
<i>Chan</i> (2010)	x	x	x	x							
<i>CAS</i> (2003)			x			x				x	x
<i>Schönborn</i> (2010)	x		x	x	(x)	(x)	(x)	(x)	x		

Source: own editing

² In fact, *Pálinkás* [2011] did not give a name to this category, but based on its meaning, I classified it as liquidity risk.

Milos (2011) defines financial risk as follows: it is a risk arising from price volatility, which directly or indirectly affects the value of a business.

Esty (1999) mentions financial risk among project risks, along with preparatory risk, operational risk and sovereign risk. According to *Ennouri* (2013), financial risk means the exposure of a company to potential future losses. On the one hand, such losses may arise from changes in the financial markets, on the other hand, from the fact that the debtors of the enterprise do not fulfil their payment obligations properly.

In the relevant literature, financial risk is not defined directly in general, but its types are listed and interpreted instead. According to *Maverick* (2015), four main types of financial risk can be distinguished: market risk, credit risk, liquidity risk and operational risk. Within the category of financial risk, *Napp* (2011) distinguishes exchange rate risk, interest rate risk, commodity price risk, funding risk, liquidity risk and solvency risk. According to *CAS* (2003), the different risk types include pricing risk, asset risk, exchange rate risk and liquidity risk. *Schönborn* (2010) writes that the main types of financial risk are solvency risk, market risk, liquidity risk and operational risk.

The classification used by *Eichhorn* (2004) provides a valuable approach to defining and grasping financial risk: he distinguishes external and internal financial risks. In his view, *external financial risk* results from changes in financial markets, while *internal financial risk* is posed by the enterprise itself. According to *Schönborn* (2014), *external financial risk* is posed by the effect of commodity prices and the fluctuation of interest rates and exchange rates.

The identification of differences and similarities between risk types is made more difficult by the fact that some authors do not describe the category in detail (e.g. *Ennouri* (2013)). In some other works, certain financial risks, which other authors classify into a single high-priority category, are considered to belong to a separate risk group (pl. *Schönborn* (2010)).³

3. TYPES OF FINANCIAL RISKS

In literature, there are differences not only between the categorization of financial risks, but also between the names and categories of risk types. In the table below (*Table 2*), I give a short summary of most important characteristics of different financial risk categories, mentioning any possible differences in content if they can be found in literature.

³ These types were indicated with (x) in the table.

Among the relevant sources of professional literature, *market risk* is most frequently mentioned as a category (subcategory) of financial risks. In general, the effects of changes taking place in financial markets are classified into this category (e.g. by Schönborn, 2010). At the same time, according to Maverick (2015), market risk does not only refer to the changes taking place in financial markets, but also to changes in all other markets in which an enterprise operates in a competitive environment (i.e. competes).

Credit risk refers to the risk arising from lending by the enterprise, i.e. the partial and/or late performance of payment obligations by our debtors. In the case of a manufacturer/service provider, credit risk may arise from the use of a commercial loan, and it appears in the balance sheet through the change in the customer base of the enterprise. Maverick (2015) also lists the “opposite” of this risk in this category: the risk that the enterprise is not able to fulfil its obligations towards its suppliers, and as a result, its creditworthiness and its relationship with the suppliers deteriorates.

Liquidity risk: Liquidity may refer to the liquidity of assets, as well as to operational liquidity (Maverick, 2015). The liquidity of assets is based on their convertibility into money, while operating liquidity means the risk of providing daily liquidity. Liquidity risk can lead to the deterioration of a company’s creditworthiness, thus resulting in higher cost of funds (Eichhorn, 2004).

Operational risk: Operational risk arising from the everyday business activity of the company, including inter alia lawsuits, the risk of fraud, problems related to the workforce and the risk posed by the business model (Maverick, 2015).

Basic commodity price risk: Basic commodity price risk refers to the change in the price of material required for the business activity of the enterprise. However, commodity price risk often means the change in basic commodity prices only (Stoeder, 2008).

Solvency risk: Solvency risk means the risk that the enterprise will deplete its equity if it makes a loss in the long run (Hermann, 1996).

Funding risk: Funding risk arises from the situation in which the enterprise cannot provide the financial sources required for its operation and takes inappropriate decisions on financing. Later, the “non-optimal” capital structure may result in liquidity problems, increase the volatility of cash flow or the total cost of funding. *Pricing risk* means the inadequate valuation of assets owned by the company.

Asset risk: Asset risk most frequently refers to the risk arising from the change in the value of the invested financial assets (e.g. bond portfolio).

I will devote a separate part of my essay to interest rate risk and exchange rate risk in the light of corporate loan financing because of their special significance.

4. CONCLUSIONS, SUGGESTIONS: AN ATTEMPT TO ESTABLISH A UNIFORM METHODOLOGICAL FRAMEWORK

In the previous part of my study, I did not manage to identify a generally accepted conceptual and methodological framework of financial risks in the case of non-financial enterprises. Based on the overview of literature, we will outline some questions the consideration of which may allow us to apply a uniform and coherent risk management approach in the case of project-oriented organisations.

When defining the term 'financial risk', we talk about financial risk, as

- only this type of risk has financial consequences (or does it have only financial consequences?)
- it appears (exclusively?) through the change of some kind of financial indicator
- it affects (exclusively?) the value of the enterprise's financial assets and liabilities
- it affects the achievement of any of (all?) the financial goals of the enterprise
- what do we mean by project-oriented organisation?

It is an important question whether the cause or the effect is of financial nature (or both of them?). In the light of the questions above, a possible conceptual framework is the following: As far as causes are concerned, we only consider the change of financial indicators (primarily the exchange rate and the interest rate), while concerning effects, we only focus on short- (medium-) term financial effects. Consequently, the change in demand due to interest rate change and the effect of exchange rate change on competitiveness do not belong to this category. The effect of the change in basic commodity price is not directly included in the model.

When defining financial risk, we focus on two effects only:

1. *Change in the value of the financial assets and liabilities of an enterprise (change in equity)* owing to the change of financial indicators (e.g. interest rate, exchange rate) Related risk types: yield risk and exchange rate risk.
2. *Short-term change in the cash flow of the enterprise* due to the change of financial indicators (interest rate, exchange rate) This effect influences the funding decisions of the enterprise, especially in the field of liquidity management. The related goal of the company is to guarantee continuous liquidity at the minimum level of costs required by the funding risk profile of the enterprise. The first consequence is the deterioration of the profitability of the company owing to an increase/decrease in interest expenditures (and/or) payments of principal. Consequently, in this case, we talk about interest rate risk and exchange rate risk. Another consequence can be felt through the change in the costs of liquidity management, in-

cluding the related transaction cost, which, change owing to the deterioration of creditworthiness or increase due to the change of the balanced coverage position of the company, depending on whether we talk about receivables or liabilities.

On project-level, when defining financial risks, we can ignore the effects of change in equity due to their long-term consequences. At the same time, the consequences of cash-flow change must be taken into account in two sections: based on their effects on the funding of the project in question as well as on their possible effects on real processes. Financial risks changing the cash-flow influence the funding of the project if the organisation passes on their costs to the project itself. If the funding of the projects is centralised and takes place at company level, this effect does not influence the profitability of the project. The cash-pool system is one of the implementation models of the aforementioned centralised funding. Another important consequence of cash-flow change is its effect on the real processes of the enterprise. In connection with this, it should be examined whether the realisation of financial risks can change the critical path of the project and lead to a delay in the implementation time, as it can result in further deterioration of profitability, or in an unfavourable situation (due to delayed performance or longer manufacturing time), it can lead to exclusion from the given market.

This effect should not be considered if funding is not limited for the enterprise at the level of the given project. In this case, the enterprise always provides the project with the all the required sources of funding (the total amount) in time (irrespective of the occurrence of financial risk). In this case, the financial risk does not affect the real processes of the enterprise. A possible means of unlimited financing is the cash-pool system. At the same time, it should be noted that financial risks affecting funding will not disappear even in this case. They will arise only at company level, and in a certain regulatory framework, they will be passed on to the customer, in a slightly different form.

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