

## THE NEED FOR AND POSSIBILITIES OF MARKETING RISK MANAGEMENT

Aleksandras Vytautas Rutkauskas<sup>1</sup>, Adomas Ginevičius<sup>2</sup>

*Vilnius Gediminas Technical University, Sauletekio ave. 11, LT-10223 Vilnius, Lithuania*

*E-mail: <sup>1</sup>ar@vgtu.lt; <sup>2</sup>adomas888@gmail.lt*

**Abstract.** The paper presents a comprehensive analysis of various risks involved in marketing activities and the effectiveness of marketing strategies under the conditions of uncertainty and risks. A scheme of risk management based on determination and use of costs effect in forming and managing risks' portfolio, as well as the conditions of scheme realization based on the so-called adaptive distributions of possibilities' probability are desirable. In this case the main parameters of distribution of possibilities' probability are perceived as stochastic values used to increase the effectiveness of the methods of marketing under uncertainty conditions.

**Keywords:** marketing risk, a number of possibilities, confidence, adaptive distributions.

### 1. Introduction

Every marketing professional or expert knows from his/her experience that marketing is an ocean' of various risks and swimming in this ocean is extremely dangerous without having a universal theoretical approach to risk management as well as proper risk identification, quantitative evaluation and economic assessment technique (Suhobokov 2007; Vlasenko, Kozlov 2009). If it is true that the lowest risk management level achieved helps to save useful resources by 15-20 % as well as increasing cost effectiveness by 2-3 % in any kind of activities, then, these figures for marketing searching for ways of promoting goods and services, should be at least doubled.

However, there is the reverse of the medal, implying that the research into marketing risk management requires high competence and vast expenses. There are some problems in this field, whose seeming satisfactory solutions made by using standard methods require new theoretical approaches.

In fact, the problems of marketing risk management, which are as old as marketing itself, are not thoroughly analyzed and described in the literature.

Even in the update databases in the Internet, one can find limited information about its application.

The objective of the paper is to develop a scheme of marketing risk management and present possibilities of its realization based on adaptive probability distributions.

The main tasks in order to achieve the objective of the paper are:

- to determine the main risk types and factors in a company;
- to develop a scheme of quantitative risk evaluation and economic assessment;
- to construct a scheme of marketing risk management pool;

– to develop and explain a concept of adaptive probability distributions in the context of marketing risk management.

In the paper the methods of logical and systemic analysis were used, as well as the method of imitative technologies.

### 2. Marketing Risk – Where Does it Come From?

Marketing risk identification is closely connected with the identification of market risks in general and designing of their management schemes.

The papers of Mark R. Greene (1969) and Donald R. Tall (1967), where marketing risks are separated from the problems associated with common market risks and their study, deserve special attention in this respect. Therefore, the framework for integrated risk management in international business' suggested by Kent D. Miller (1992), is considered by many to be a move towards crystallizing market risks out of common and transnational business risks. In Table 1 (which is based on the work of Depeng Zhang *et al.* 2008), the crystallized types of marketing risks and a set of factors influencing them are presented for a retail trade company together with layers for evaluation of risk index.

However this work, like many other studies of marketing risks, is restricted to ranking various types of risk (according to the harm made), though evaluation, allowing the determination of the harm made to recipients.

The paper of Mark R. Greene (1969) 'How to rationalize your marketing risk' considers a hypothesis that 'managers who estimate possible losses and honestly evaluate the risk involved can vastly improve their marketing decisions'. The paper also provides a logic flow chart for marketing risk decisions, where step 7 presents marketing risks collectively,

outlining major problems of marketing risk analysis aimed at collecting the information required for making risk management decisions (Fig. 1). In fact a profound risk concept is described in this five step analysis, and decision – making logic based on combining risk and confidence is suggested.

Step 2 defining the extent of maximum loss and its probability which may be used for determining a possibility of the integral loss and evaluating its confidence deserves special attention.

However we think that step 3, presenting risk (possible loss) as a negative consequence of riski-

ness of a particular process (object) and the interaction of possibilities and abilities of a recipient (subject) is also very important. It may be stated that most of recent publications lack such profound risk concepts.

It should also be noted that the authors do not just play with such impressive terms as macroeconomic and microeconomic risk, currency exchange rate risk, etc., which being powerful in expressing risk probability are still closely related to the particular criteria describing marketing, as far as their possible effects are concerned.

**Table 1.** Environmental Risk Types and Factors Influencing Their Occurrence in Retail Enterprise Transnational Marketing (Zhang *et al.* 2008)

	<i>Risk types</i>	<i>Risks factors</i>	<i>Project layer</i>
Macro environmental risks Environmental industry risks	Polity risks	Polity certainties in host countries; strike; economic crisis; force of religion and nationalism; threatening local retailers; inharmonious relationship with communities and residents in host countries	The certainty of policy Attitude to foreign investors The certainty of economy The certainty of currency/exchange rate Social environment and ideological system
	Economic risks	Strict market entering policy; retail control; change of exchange rate; deterioration of international balance of payments in host countries; inflation; foreign exchange control; economic policy change	
	Cultural risks	Cultural difference between the host country and home country; nationalism tendency in the host country; retailers being unfamiliar with culture in the host country, etc.	
Environmental industry risks	Market risks	Business recession in local retail industry; incorrect commodities sale; wrong market forecast; lack of price competitiveness, etc.	Degree of retail industry's boom Degree of retail industry 's competition
	Competition risks	Intense competition between local retail enterprises; the entering of transnational retail groups; intense competition on domestic market and so on.	
	Supply chain risks	Credit situation of suppliers or partners; relative by big conflict with local suppliers; lack of information communication of supply chain; lacking localization purchasing and so on.	
Internal risks Of enterprise	Expanding risks	Capital chain break caused by expanding; risks of development private brand; excessive investment; insufficient revolving fund; interest increase	The rate of sales profit Market share Price sensitivity Internal risks of enterprise Price competitiveness Evaluation of promotion effect The proportion of sales cost Degree of customer satisfaction Degree of customer loyalty
	Credit standing risks	Poor quality of sold goods; poor image of origin; environmental pollution resulting from commodity production	
	Internal management risks	Inaccurate management culture comprehending; high frequency changes of managers or brain drain; inefficient communication and cooperation between employees, etc.	
	Promotion risks	Unreasonable retail marketing mix; frequent promotion; potential risks caused by promotion, etc.	

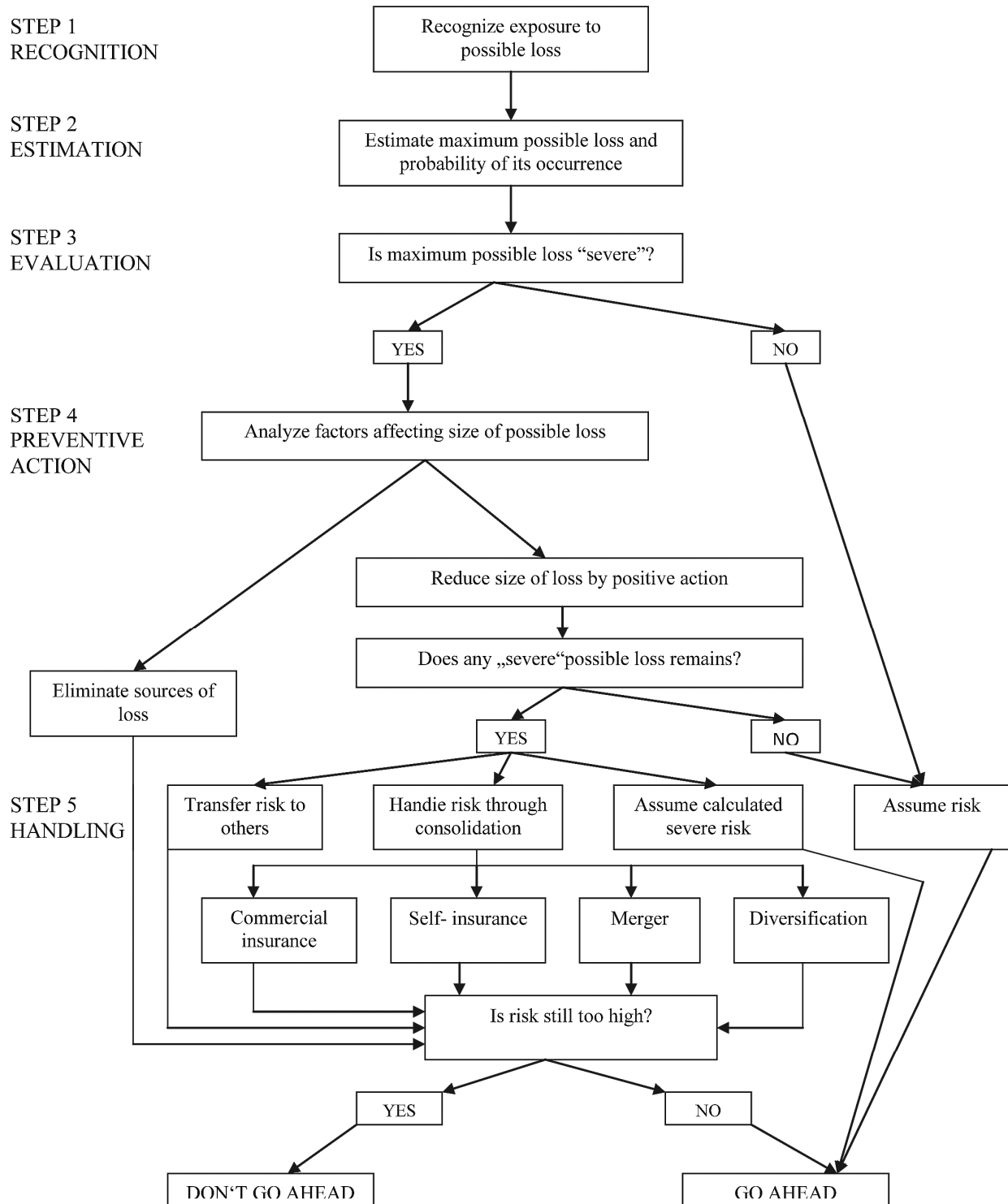


Fig. 1. Logic Flow Chart for Marketing Risk Decisions (Greene 1969)

### 3. A Scheme of Identification of Marketing Risk Criteria, Quantitative Risk Evaluation and Economic Assessment

#### 3.1. Marketing Risks Identification and Management Peculiarities

Today, any kind of activities is exposed to various types of risks closely associated with the process of globalization (Mačerinskas *et al.* 2003). This primarily applies to marketing which, making usually a part of international business, on the one hand, and being the investment activities, on the other, is exposed to a great variety of risks (Sabonienė 2009). Taking it not seriously, we may say that it is much easier to name risks that do not concern marketing than list all of them.

Some of the risks in international business are strategic risk, operational risk, political risk, country risk, technological risk, environmental risk, economic risk, financial risk terrorism risk.

Types of investment risks are as follows: inflation risk, interest rate risk, business risk, financial risk, tax risk, event risk, liquidity risk and etc. One can see that the above risks directly concern marketing, however, separate analysis of marketing risks and, particularly, the most important ones, seeking to develop management models, is hardly possible in practice and not acceptable from the theoretical point of view.

It may be stated that the methods of comprehensive marketing risk analysis, allowing the dangers of risks to be associated with expenses required to avoid losses, have not been developed yet.

It is expected that marketing risk pools could become a tool of marketing risk analysis and help generate information required for decision making.

On the one hand, then could evaluate risks for major marketing activities, while, on the other hand, they could stimulate centres of marketing risk costs to achieve the goal described above (Fig. 2).

What items could become risk pools or structures accumulating natural results of risk effects and allowing the demand for risk expenses to be

quantitatively evaluated? It seems that it would be difficult to suggest an alternative to ideology generally dominating in business, according to which indicators integrated results of the main activities could serve as the centres of expenses. On the one hand, the effect of all risks to which a particular activity is subject to is accumulated in these total items. On the other hand the dynamics of these items reveals the need for risk management and possibilities of the latter.

Structural elements of marketing, denoted as 4P, 7P or other P number, which can be used as the centres of risk costs, offer exceptional possibilities to this activity. At the same time, they are the centres of direct marketing expenses and investments (Fig. 2).

However, assessing the effect or effectiveness of marketing (Valančienė, Gimžauskienė 2009) and each structural element in particular, the problems associated with the ambiguity and even lack of the account data arise. Nevertheless, theoretical and practical works emphasize the importance and urgency of these problems.

In marketing, whose aims and goals are directed towards the near or distant future, possibilities are usually considered to be stochastic values or processes. This implies that, assessing a possibility, its size, confidence and risk, considered to be the riskiness of a set of possibilities and ability of a recipient of risk consequences to deal with risk, should be defined.

Thus, three-dimensional presentation of a set of possibilities requires adequate methods of determining their significance to various recipients (Rutkauskas 2006; Rutkauskas *et al.* 2008; Rutkauskas *et al.* 2008; Stasytė, Rutkauskas 2008), which are commonly based on the use of a three-dimensional utility function  $u$ :

$$U = u(e, g, r) \quad (1)$$

Where:

$e$  is the guarantee of effectiveness (effect) indicator;

$g$  is possibility's guarantee;

$r$  is possibility's risk.

Visually, the process of decision making may be schematically shown as depicted in Fig.3.

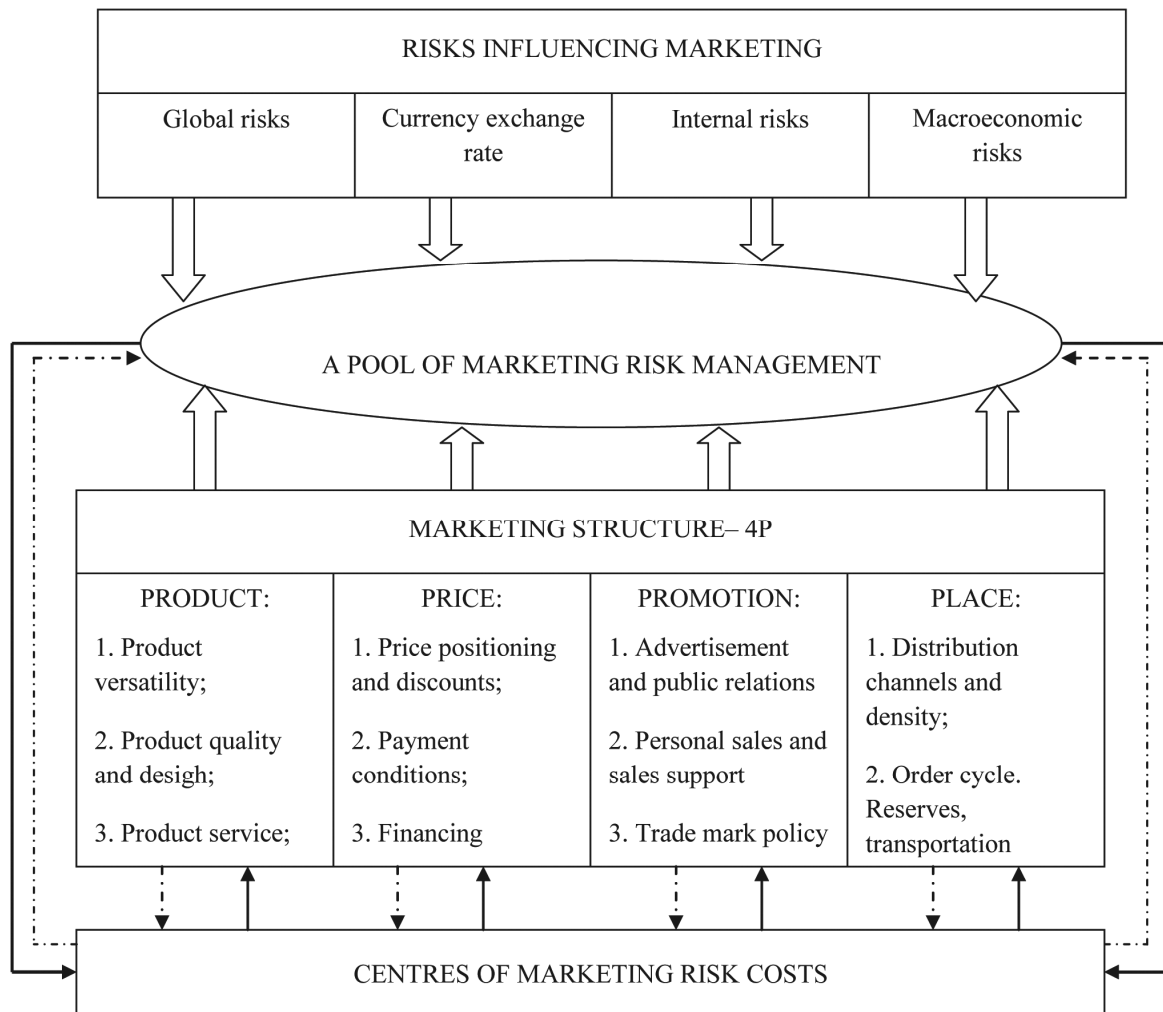


Fig. 2. A Scheme of Marketing Risk Management Pool

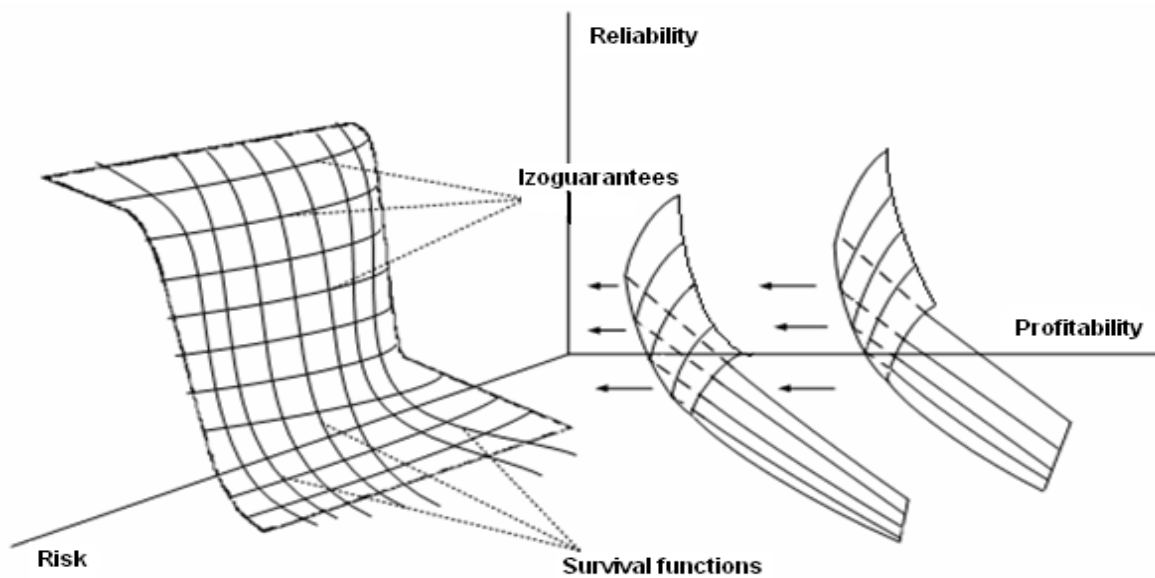


Fig. 3. Search for Effectiveness Zone (Left Side) and Utility Function (Right Side) Intersection

### 3.2. A Case Study

#### 3.2.1. A Moment of Analysis of Interaction of Riskiness and Utility Changes

As mentioned above, to determine the effectiveness of marketing costs, expert evaluation is often used. The analysis of marketing effectiveness and risks, in particular, by expert evaluation is very complicated and should be based on theoretical principles (Ginevičius, Podvezko 2008; Ginevičius, Zubrecovas 2009; Zavadskas *et al.* 2008). An effort is made to show (Fig. 4) how the maximum value of the utility function would change if we could reduce the level of risk, not changing other conditions.

Analytical calculations show that in analyzed situation the standard deviation of possibilities' probability distribution of the marketing profit share is reduced by 20 percent due to improving marketing strategies. Visually it is reflected by first survival function changing the second. However, one can see that the value of the utility function has increased only by about 10 percent comparing first point to the second point. This shows that a relative risk decrease is smaller than the utility growth. It is clear that this situation requires a more detailed further analysis. However, the described analytical methods of measuring the effectiveness of risk reduction may promote the development of risk evaluation system.

#### 3.2.2. Adaptive Possibilities' Probability Distributions

As one can see from practical situations analysis, the environment of marketing activity is a maze

of uncertainty strains, which often requires to transform a classic research methods and canons. As an exceptional example of the mentioned above is that using models of probability theory – possibilities' probability distributions – an established attitude, stating that parameters of distributions must be discreet values, ought to be rejected. Indeed, if we make an assumption that, for example, mean value or (and) standard deviation of a Normal probability distribution with a set of approximated stochastic values –  $\xi_1, \xi_2, \dots, \xi_t$ , in turn, is also represented as stochastic value, then approximation characteristics of these models greatly improve. This happens not only analysing the efficiency zone as a typical object of this research, but also analysing dynamics of stock prices and currency exchange rates. Thus an assumption about stochasticity of the utilized distributions' parameters strongly improves approximation characteristics of the models; for example, for various length interest rate or inflation rate series a lower confidence interval of the certain level can be constructed. In our opinion, such distributions can be perfectly named as adaptive possibilities' probability distributions. Visually the difference between two probability distributions can be seen in Fig.5.

In section *a* Normal probability distribution with  $N(m = 27; s = 5)$  is presented, while in section *b* one can see Normal probability distribution with mean value 27 and a standard deviation expressed, in turn, also as Normal probability distribution with  $N(m = 5; s = 1.7)$ .

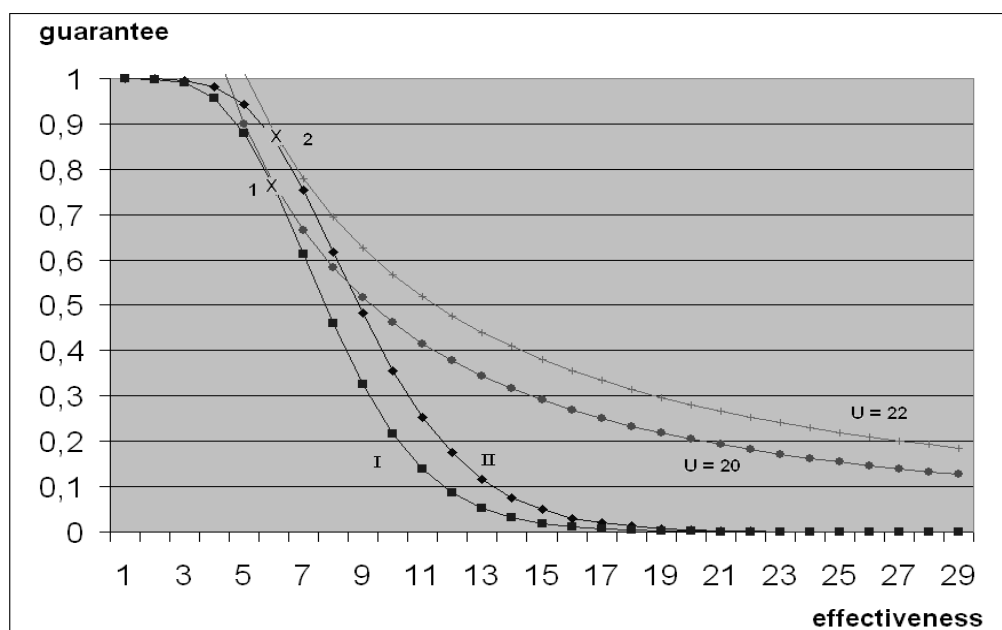


Fig. 4. A Moment of Risk and Utility Interaction Analysis

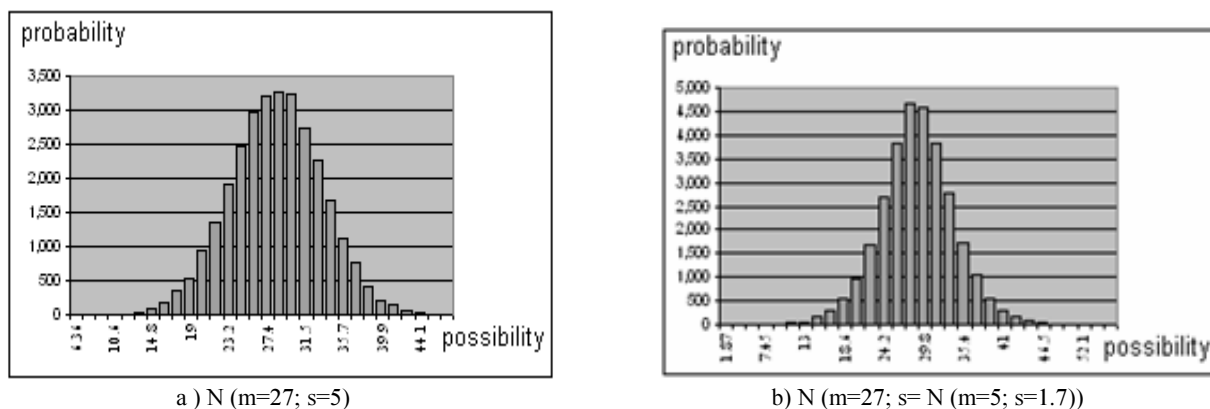


Fig. 5. Simple and Adaptive Probability Distributions

#### 4. Conclusions and Recommendations

A lack of marketing financial effectiveness research results and quantitative models of marketing is strongly determined by high riskiness of marketing activity, as well as by adequate methodology for such situations.

Great improvement in marketing risk management would guarantee the respective increase in effectiveness of resources used in a particular business.

Development of marketing risk management system poses new requirements for risk analysis and management methods and practice.

#### References

- Ginevičius, R.; Ginevičius, A. 2008. Sustainability Decisions in Marketing Complex Cost Optimization Process, in *The 12<sup>th</sup> World Multi-Conference on Systemics, Cybernetics and Informatics*. Orlando, Florida, USA June 29 – July 2, 35–40.
- Ginevičius, R.; Podvezko, V. 2008. Daugiakriterinio vertinimo būdų suderinamumas [The Problem of Compatibility of Various Multiple Criteria Evaluation Methods], *Verslas: teorija ir praktika* [Business: Theory and Practice] 9(1): 73–80.
- Ginevičius, R.; Zubrecovas, V. 2009. Selection of the Optimal Real Estate Investment Project basing on Multiple Criteria Evaluation using Stochastic Dimensions, *Journal of Business Economics and Management* 10(3): 261–270.  
doi:10.3846/1611-1699.2009.10.261-270
- Greene, M. R. 1969. How to Rationalize your Marketing Risks, *Harvard Business Review* 47(3): 114–123.
- Investment Risks. 2009. [online] [accessed 19 Dec. 2009]. Available from Internet: <http://thismatter.com/money/investments/investment-risks.htm>.
- Jagminas, V. 2008. *Kaštų apskaita pagal veiklas* [Activity Based Costing] [online] [accessed 12 December 2009]. Available from Internet: [http://www.buhalteris.lt/index.php?cid=382&new\\_id=210195](http://www.buhalteris.lt/index.php?cid=382&new_id=210195).
- Kalčinskaitė, R. 2007. *Apskaičiuota atsakomybė* [Estimated Accountability] [online] [accessed 12 December 2009]. Available from Internet: [http://www.buhalteris.lt/index.php?cid=382&new\\_id=24378](http://www.buhalteris.lt/index.php?cid=382&new_id=24378).
- Kennon, J. *The 3 Types of Investment Risk* [online] [accessed 22 December 2009]. Available from Internet: <http://beginnersinvest.about.com/cs/valueinvesting/1/a/080103a.htm>.
- Mačerinskas, O.; Matekonienė, J.; Pupinytė, A. 2003. Impact of Globalization on National Economies: the Main Concepts, *Inžinerinė Ekonomika – Engineering Economics* 3(34): 68–75.
- Okolo, S. 2008. *Risks in International Business* [online] [accessed 10 December 2009]. Available from Internet: <http://ezinearticles.com/?Risks-in-International-Business&id=1331702>.
- Rutkauskas, A. V. 2006. Adekvačiojo investavimo portfelio anatomija ir sprendimai panaudojant imitacines technologijas [Adequate Investment Portfolio Anatomy and Decisions, Applying Imitative Technologies], *Ekonomika: mokslo darbai* [Economics: Research Papers] 75: 52–76.
- Rutkauskas, A. V.; Miečinskienė, A.; Stasytė, V. 2008. Investment Decisions Modelling along Sustainable Development Concept on Financial Markets, *Technological and Economic Development of Economy* 14(3): 417–427.  
doi:10.3846/1392-8619.2008.14.417-427
- Rutkauskas, A. V.; Stasytė, V.; Ginevičius, A. 2008. Three-dimensional Measurement of Market Behaviour, in *The 5<sup>th</sup> International Scientific Conference "Business and Management 2008"*. Vilnius, Lithuania, 16–17 May, 297–302.
- Sabonienė, A. 2009. Lithuanian Export Competitiveness: Comparison with other Baltic States, *Inžine-*

- rine Ekonomika – Engineering Economics* 2(62): 49–57.
- Stasytytė, V.; Rutkauskas, A. V. 2008. Prospecting for Sustainable Investment Possibilities in Financial Markes, in *The 12<sup>th</sup> World Multi-Conference on Systemics, Cybernetics and Informatics*. Orlando, Florida, USA, June 29–July 2, 73–78.
- Suhobokov, A. 2007. Application of Monte Carlo Simulation Methods in Risk Management, *Journal of Business Economics and Management* 8(3): 165–168.
- Zavadskas, E. K.; Turskis, Z.; Tamošaitienė, J. 2008. Contractor Selection of Construction in a Competitive Environment, *Journal of Business Economics and Management* 9(3): 181–187.  
doi:10.3846/1611-1699.2008.9.181-187
- Zhang, D.; Xiao, S.; Lin M. 2008. Research on Transnational Marketing Risk and Evaluation Index System of Chinese Retail Enterprises, in *Service Operations and Logistics, and Informatics, IEEE/SOLI 2008*. IEEE International Conference. Volume 2, 12–15 Oct. 2008, 2592–2597.
- Zhang, L.; Chen, Y.; Chen, F. 2008. Marketing Risk Evaluation of Supply Chain, in *Innovative Computing Information and Control. ICICIC '08*. 3rd International Conference. 18–20 June 2008, 14–142. doi:10.1109/ICICIC.2008.346
- Zhou, Mei-Hua; Wang, Fu-Dong; Zhang, Hong-Hong; Meng, Jan 2006. Method of Enterprise Marketing Risk Early-warning and The Index System Construction, in *Management of Innovation and Technology*. IEEE International Conference. Volume 2, 21–23 June 2006, 718–722.
- Valančienė, V.; Gimžauskienė, E. 2009. Dimensions of Performance Measurement System in Chantes Research, *Inžinerine Ekonomika – Engineering Economics* 4(64): 41–48.
- Vlasenko, O.; Kozlov, S. 2009. Choosing the risk curve type, *Technological and Economic Development of Economy* 15(2): 341–351.  
doi:10.3846/1392-8619.2009.15.341-351
- Wang, Q. 2009. Multi-agent Assessment on Marketing Risk Based on Evidence Theory, in *Electronic Commerce and Business Intelligence. ECBI 2009*. International Conference. 6–7 June 2009, 370–373.
- Wen-Fei, L. U. 2004. *Managing Marketing Risks*. Department of Applied Economics and Management, Cornell University [online] [accessed 12 December 2009]. Available from Internet: <[http://hortmgt.aem.cornell.edu/pdf/smart\\_marketing/uva4-04.pdf](http://hortmgt.aem.cornell.edu/pdf/smart_marketing/uva4-04.pdf)>